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Eadweard Muybridge



HORSES AND OTHER ANIMALS IN MOTION



45 Classic Photographic Sequences

HORSES AND OTHER ANIMALS IN MOTION

45 CLASSIC PHOTOGRAPHIC
SEQUENCES

EADWEARD MUYBRIDGE

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NEW YORK

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This Dover edition, first published in 1985, is a selection of 45 sequences from the eleven-volume work *Animal Locomotion: an electro-photographic investigation of consecutive phases of animal movements*, originally published under the auspices of the University of Pennsylvania, Philadelphia, in 1887. A publisher's note (adapted from that for *The Male and Female Figure in Motion: 60 Classic Photographic Sequences*; Dover 24745-7), captions and contents have been prepared especially for this edition. The publisher's note draws heavily upon Anita Ventura Mozley's introduction to the Dover edition of the complete work, entitled *Muybridge's Complete Human and Animal Locomotion* (three vols.: 23792-3; 23793-1; 23794-X).

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Publisher's Note

Edward James Mugaridge was born on April 9, 1830 in Kingston-upon-Thames, England. He made several alterations to his name, finally settling on Eadweard Muybridge. He emigrated to the United States and in the 1850s established himself in the book trade in San Francisco. In 1860 he sustained a serious head injury in a stagecoach accident; some think this contributed to his eccentric nature. Recovering in England, he was introduced to the art of photography, in which he soon became completely absorbed.

Muybridge returned to San Francisco in 1867 and quickly established himself as a leading photographer by producing a spectacular series of views of the Yosemite Valley. The government recognized his abilities; in 1868 he accompanied an expedition to examine the newly acquired Alaskan territories. He also produced views of the lighthouses on the Pacific Coast for the United States Lighthouse Board.

Leland Stanford, a former governor of California and the president of the Central Pacific Railroad, took note of the photographer in 1872 and decided that he was the man to help him find the solution to a vexing problem. Stanford bred horses and raced trotters. He held (correctly, but without proof) that, at some point during a fast trot, a horse will have all four legs off the ground simultaneously. Stanford turned to Muybridge to provide photographic evidence to support his supposition. Muybridge was intrigued by the challenge (for up to that time no photographs had been taken at the speed necessary to capture such action) and was beginning to develop a method for approaching the problem when a personal tragedy almost ended his career.

In 1874 Muybridge discovered that the son borne him by his younger wife was, in fact, not his. Having determined that the father was one Harry Larkyns, he sought the man out and shot him to death. Muybridge came close to being lynched. At his trial in 1875, a plea of insanity was entered but the jury ignored it, choosing instead to acquit Muybridge on the ground that Larkyns had deserved his fate.

Soon after the trial, Muybridge spent six months photographing various sites in Panama and Guatemala. Returning to San Francisco, he made a successful panorama of the city and environs and then, once again, directed his attention to the movement of the horse. Resuming his collaboration with Stanford, he developed chemical and mechanical techniques to capture motion in sequences. The publication of his results allowed people, for the first time, to see clearly attitudes taken by horses in motion.

Muybridge found that public curiosity was sufficient to warrant lectures on his experiments. To illustrate them he developed the zoopraxiscope, which, using the principle of the zoetrope, allowed him to project images creating the appearance of motion. On the basis of this invention, many people credit Muybridge as the inventor of the motion picture.

In August 1881 Muybridge went to Europe, where he was greeted with enthusiasm. On November 26 the painter Ernest Meissonier held a glittering reception for him in Paris. Initially, Muybridge met with similar acclaim when he went to England, counting among his audiences Gladstone, Tennyson, Huxley and the Prince and Princess of Wales.

On his return to the United States in 1882, Muybridge continued to lecture, but also turned his attention toward organizing a project to further his investigations into locomotion by photographing men, women, children and animals, using a setup much like the one he had developed with Stanford. Unable to finance the project himself, he finally arranged for it to be done under the auspices of the University of Pennsylvania. In return for the facilities provided, Muybridge agreed to work under the supervision of members of the university representing the worlds of science and art, including the great painter Thomas Eakins.

Work began in 1884; the last series that was included in the final work was photographed on October 28, 1885. The university published *Animal Locomotion; an electro-photographic investigation of consecutive phases of animal movements* in eleven volumes in 1887. Subscribers paying \$100 were entitled to order 100 plates from the total of 781. To drum up business, Muybridge continued his lecture tours in the United States and Europe. In the end, close to 450 copies were sold.

After running an exhibition of the zoopraxiscope on the Midway of the World's Columbian Exposition of 1893, Muybridge returned to England permanently. He died in Kingston-upon-Thames in 1904.

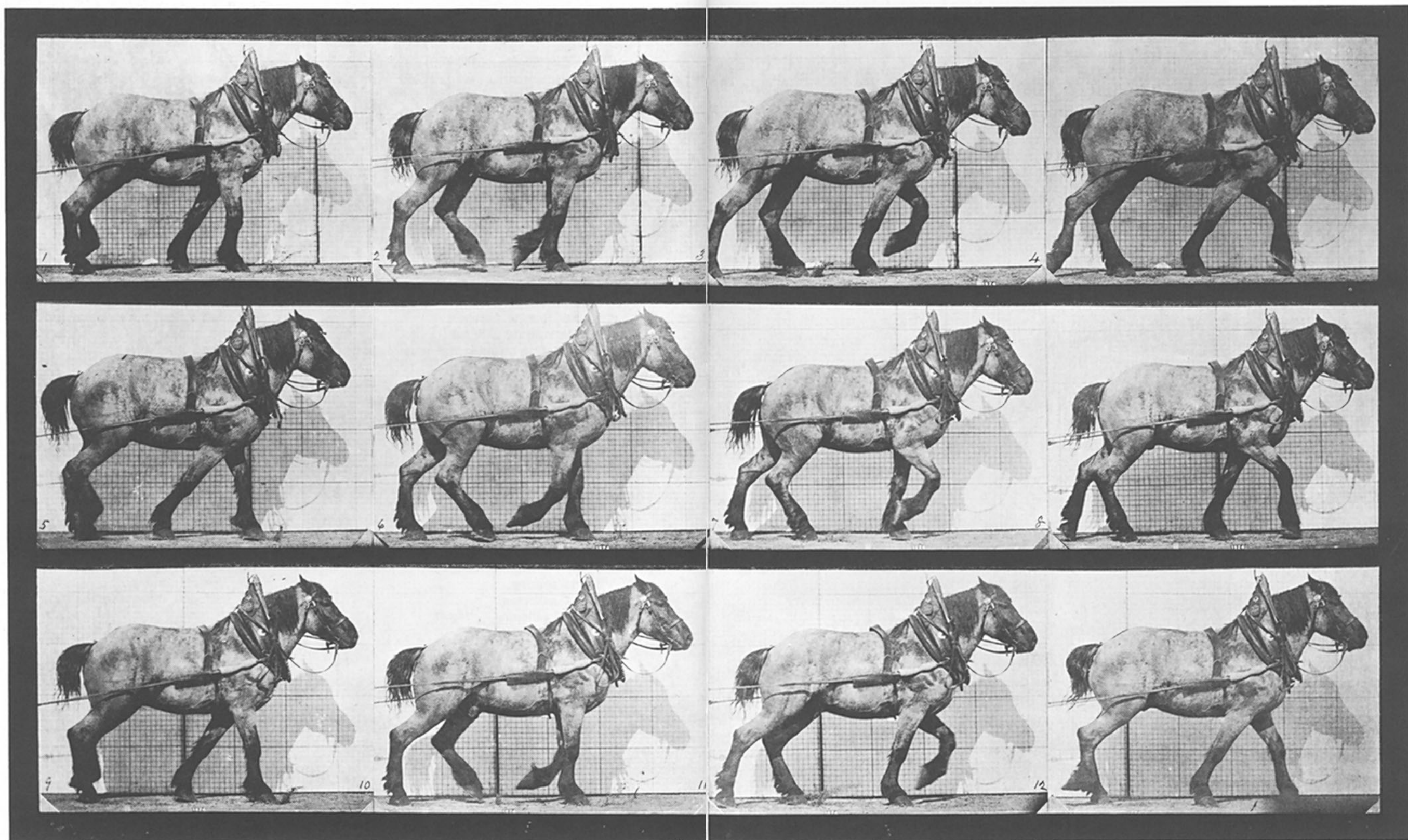
The 45 sequences presented in this volume were selected from the complete set of 781. To understand the plates fully, it is necessary to discuss briefly Muybridge's method of photographing animals. Wild animals and birds were photographed at the Philadelphia Zoological Garden in 1884 and 1885; horses, farm and domesticated animals in Gentlemen's Driving Park in 1885. A portable backdrop was marked off

by threads into squares of 5 cm (approximately 2 inches). These aided in following the movements and facilitate use by artists. Parallel to the backdrop was a battery of 24 cameras. Two batteries of 12 cameras each were positioned at either end of the backdrop, either at an angle of 90° relative to the backdrop or at an angle of 60°. (Naturally, the difficulties of handling animals necessitated occasional modifications of this system.) The equipment (and the use of newly available gelatin dry plates) allowed three photographs to be taken simultaneously, one from each battery. The photographs

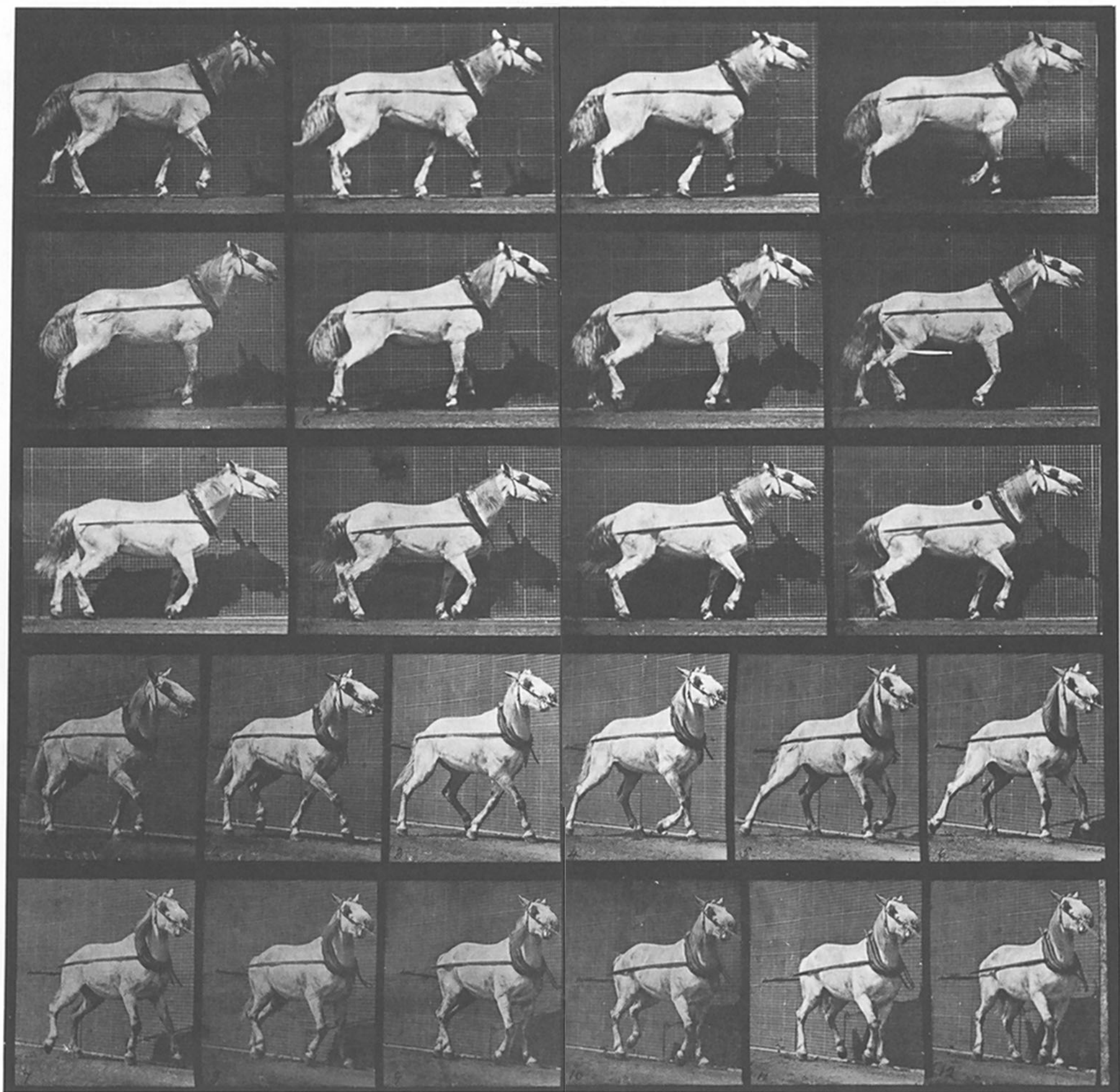
reproduced in the plates (frequently featuring views from two vantage points) are numbered in chronological order, going from left to right if such was the principal direction of the action being recorded; right to left if the motion occurred in that direction. When several separate sequences are recorded on a plate, they are differentiated by letter. The descriptions of the activities depicted are based closely on those assigned by Muybridge in his *Prospectus and Catalogue of Plates*.

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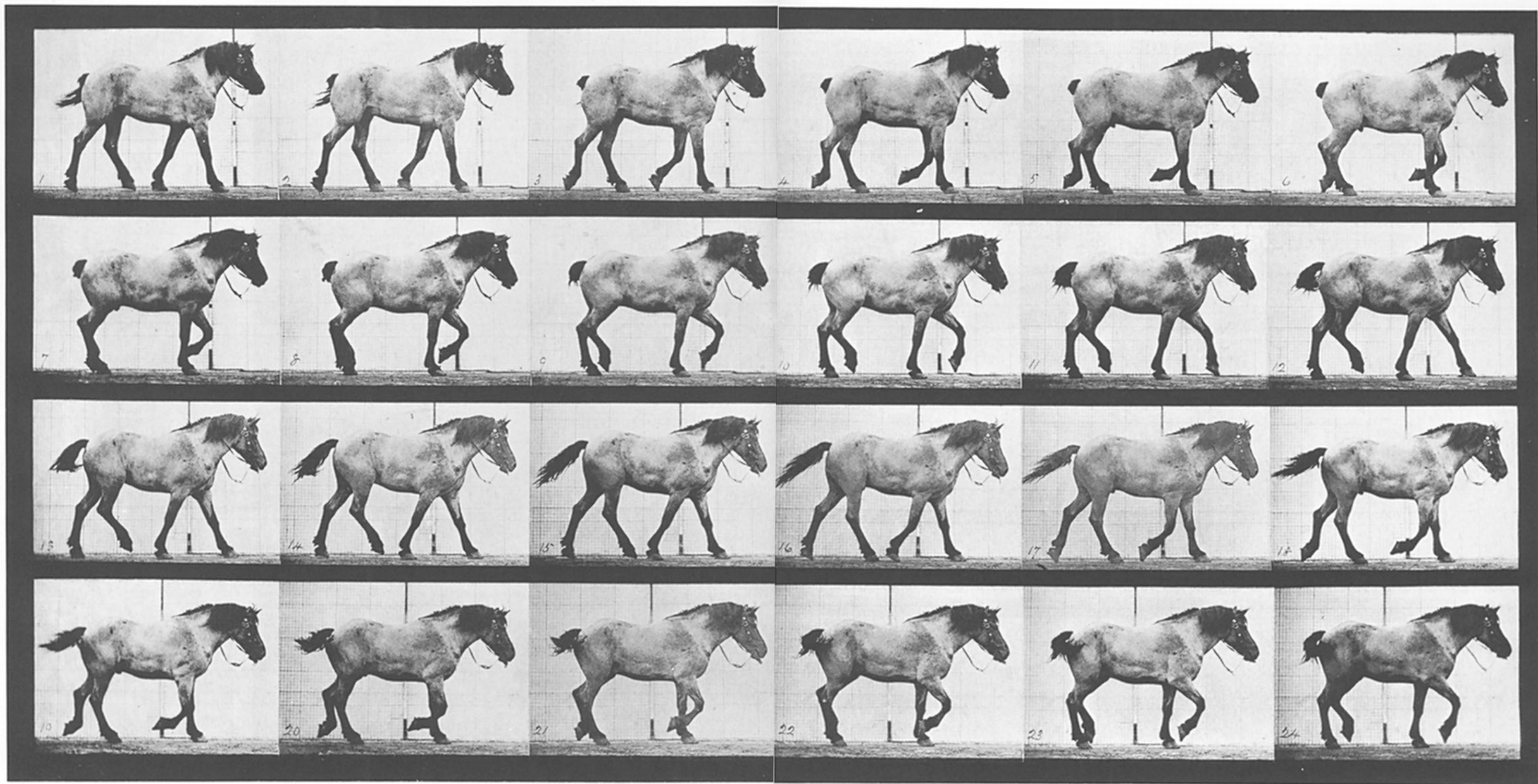
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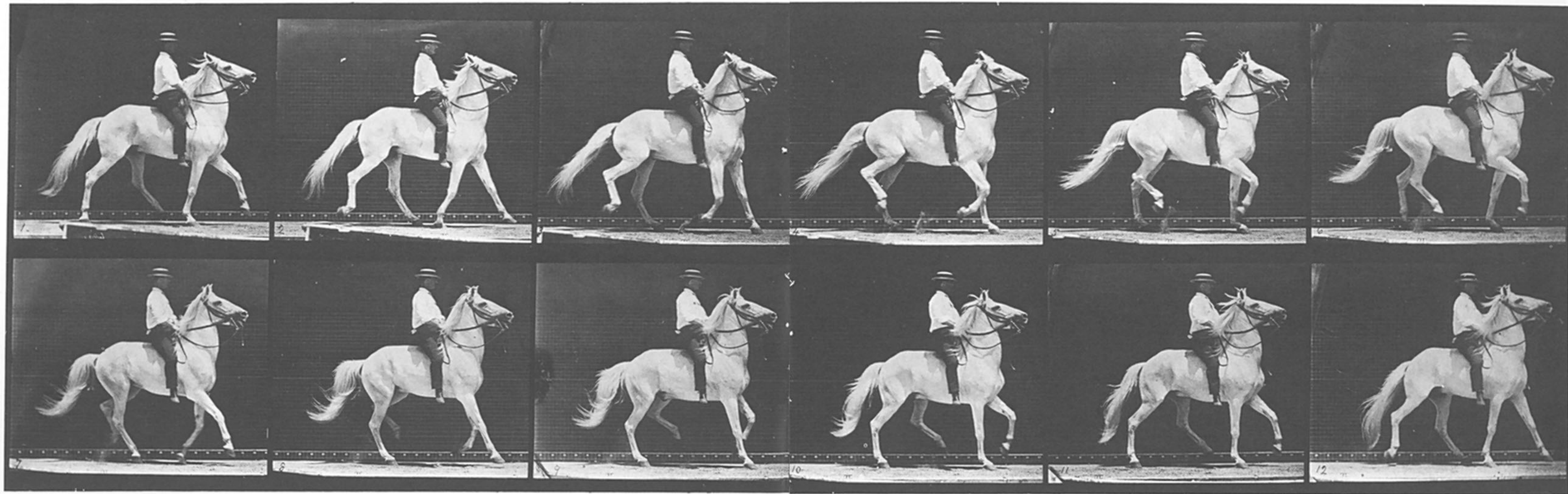
1. "Dusel" hauling.



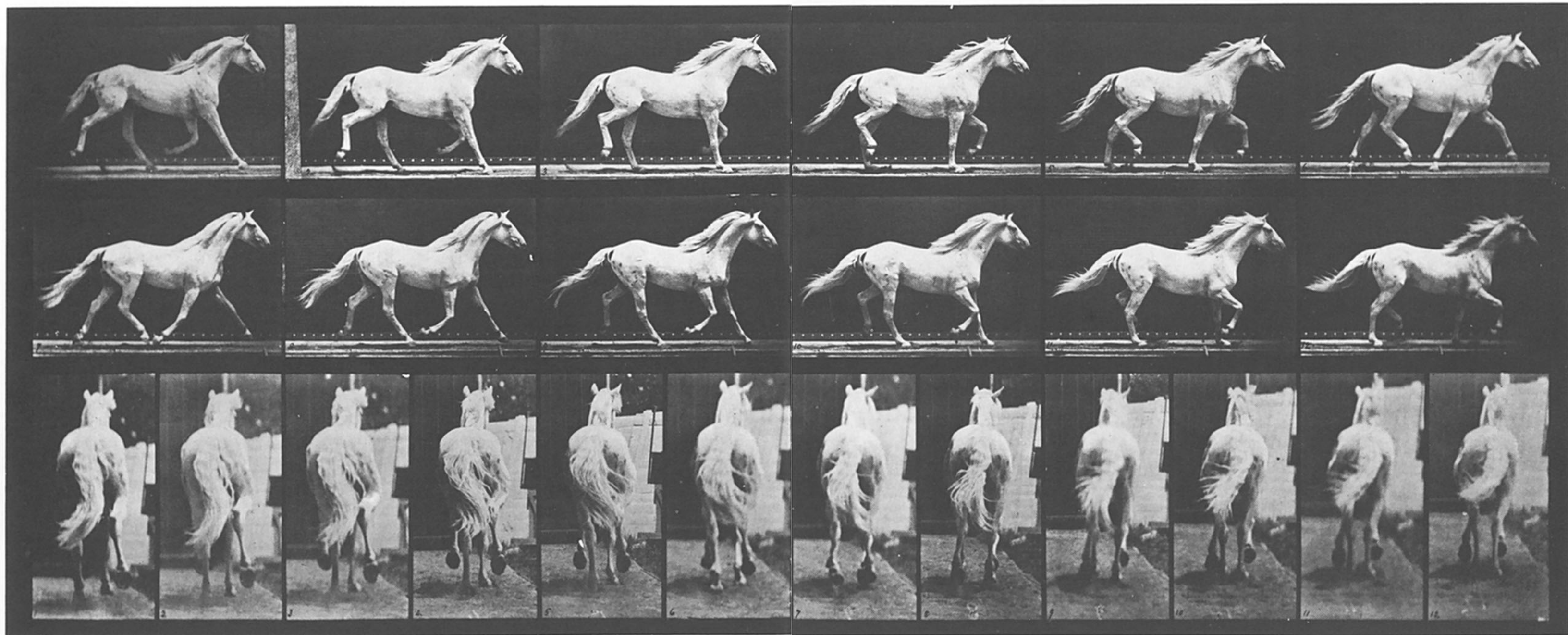
2. "Johnson" hauling, head being pulled.



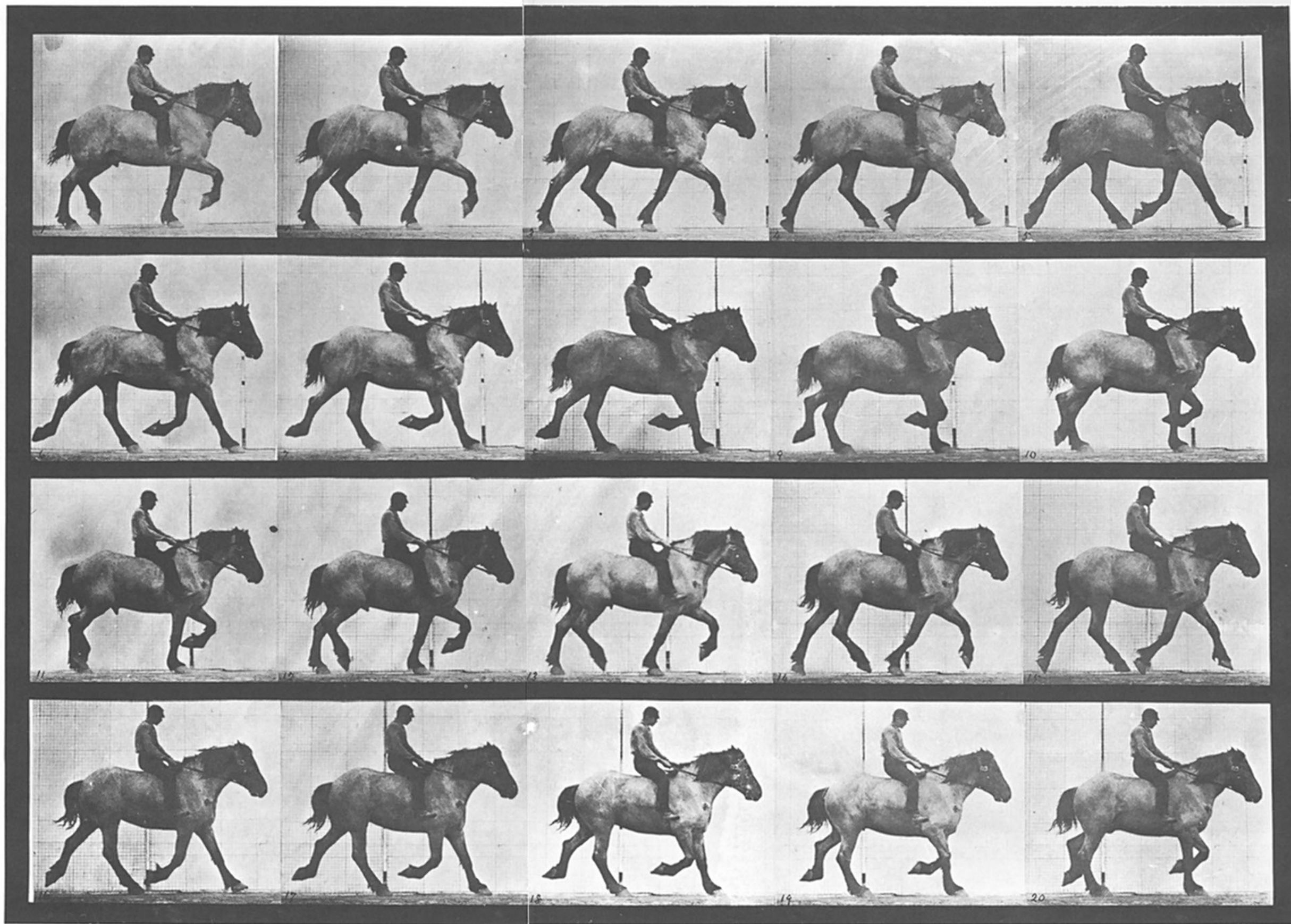
3. "Hansel" walking, free.



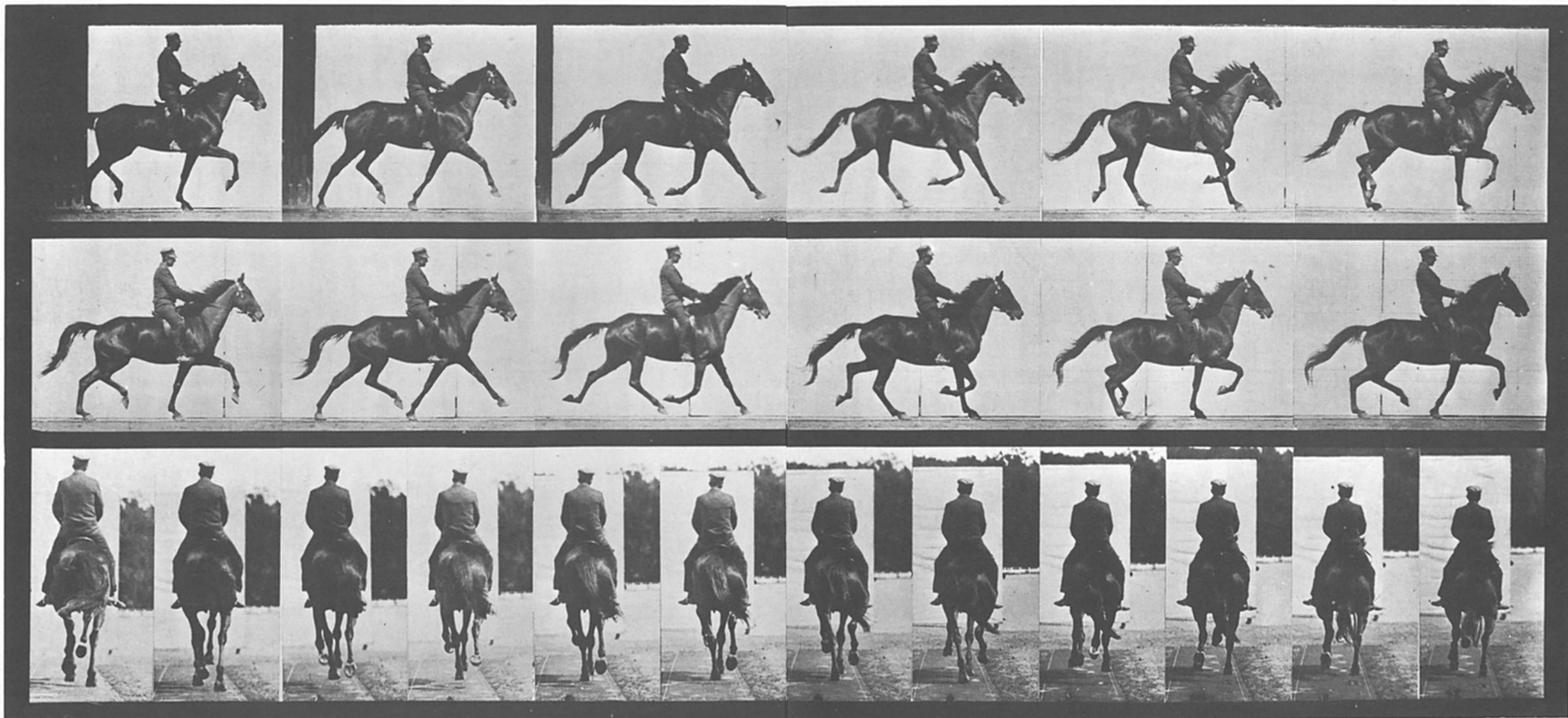
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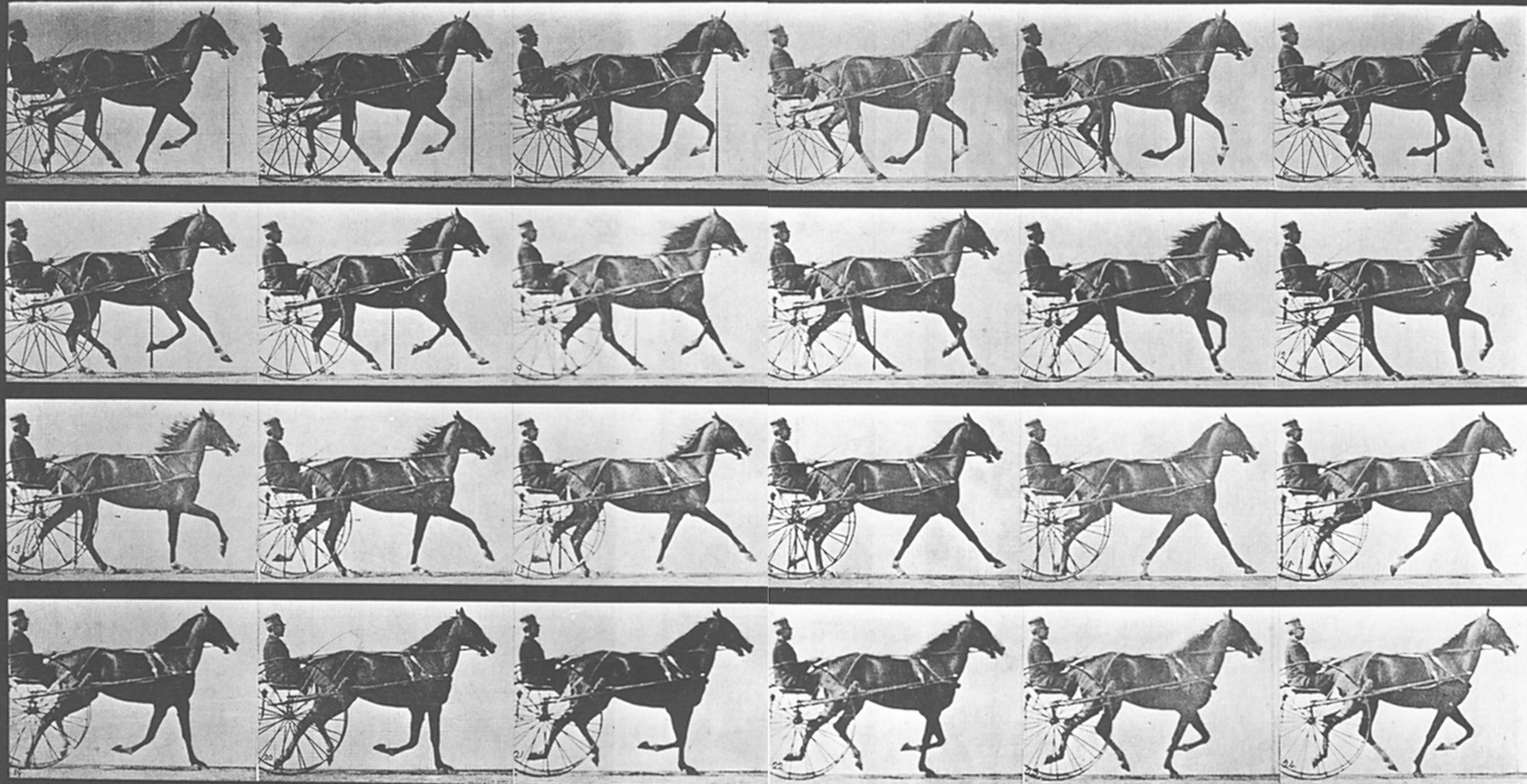


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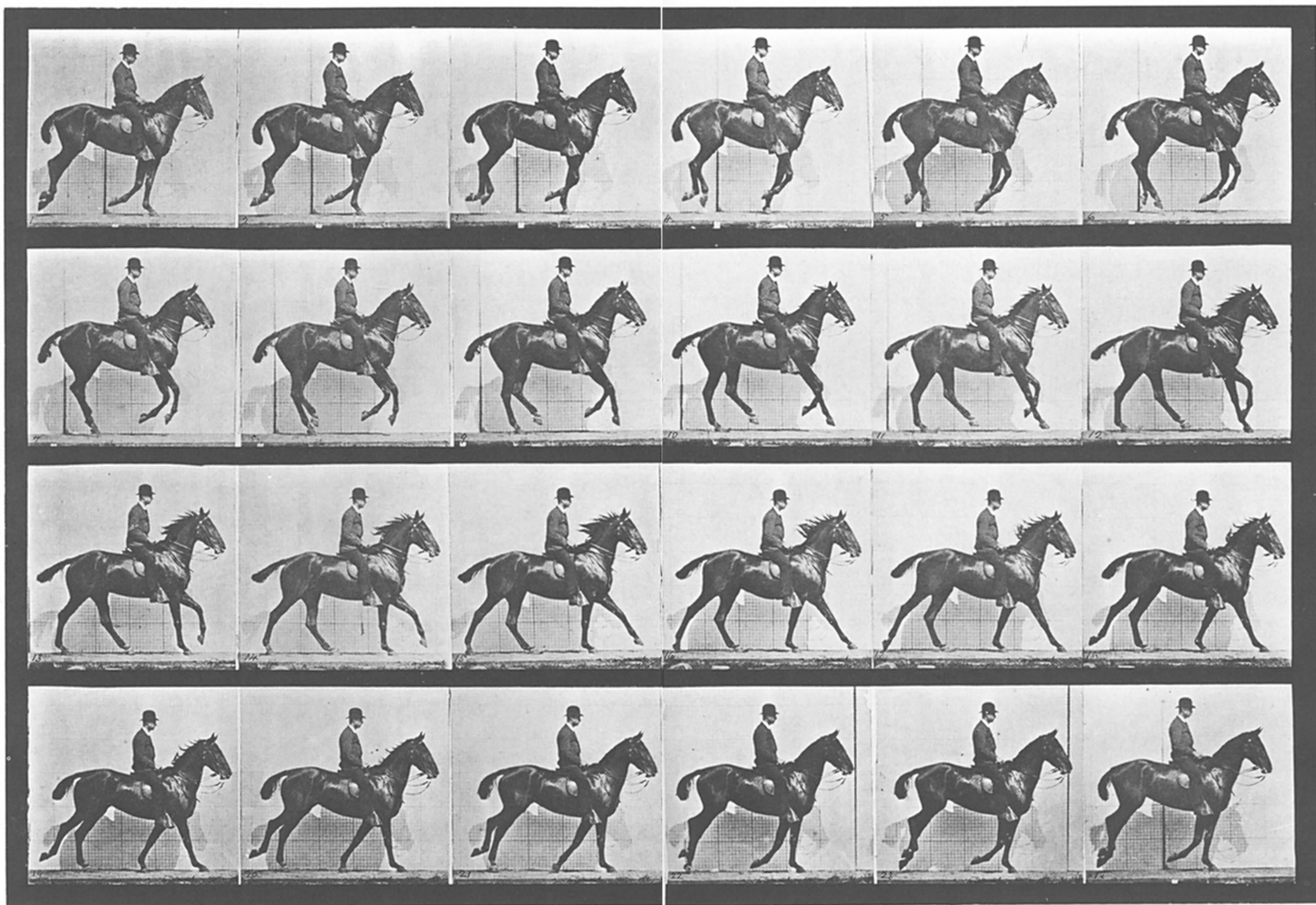


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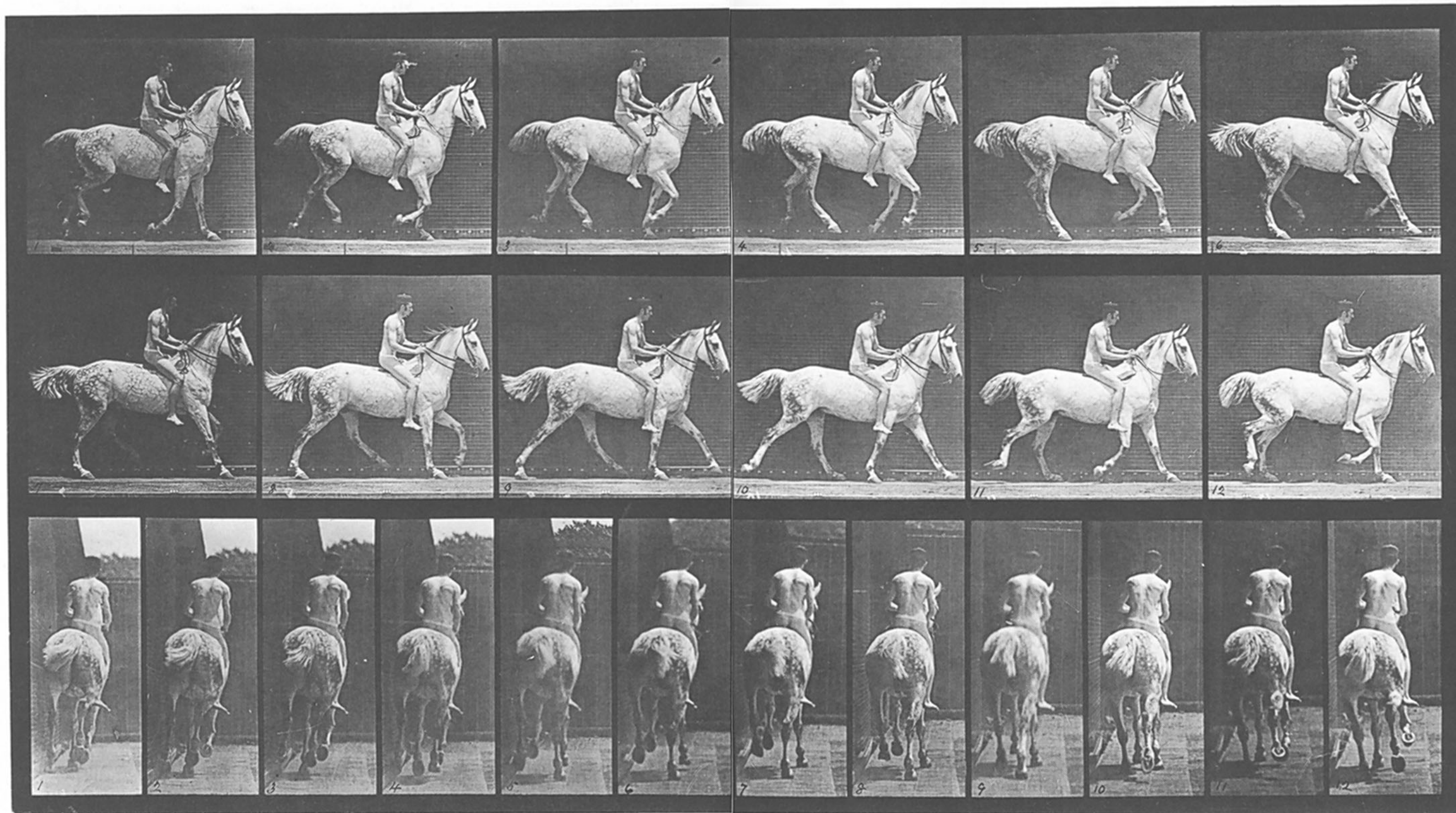




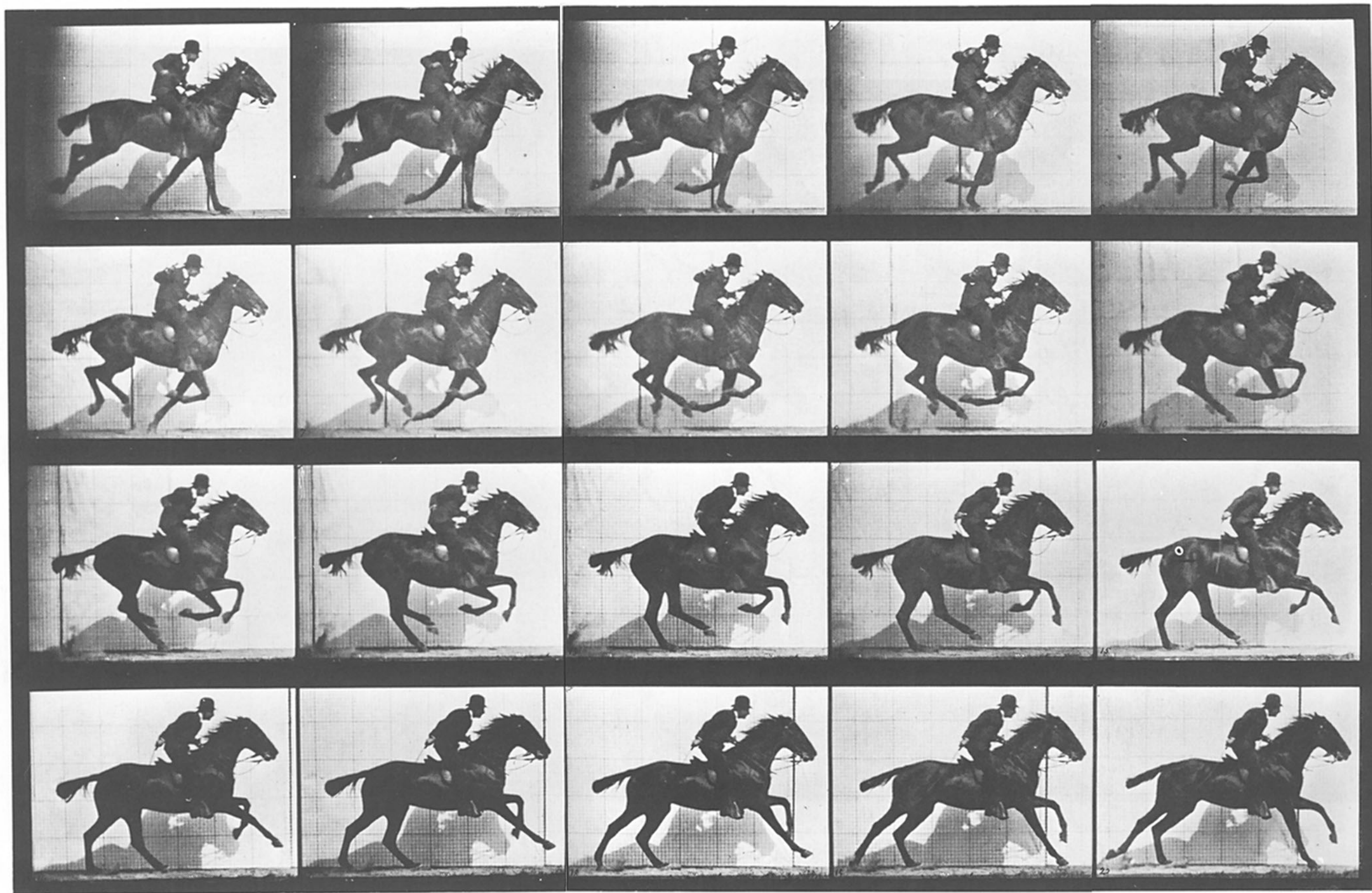
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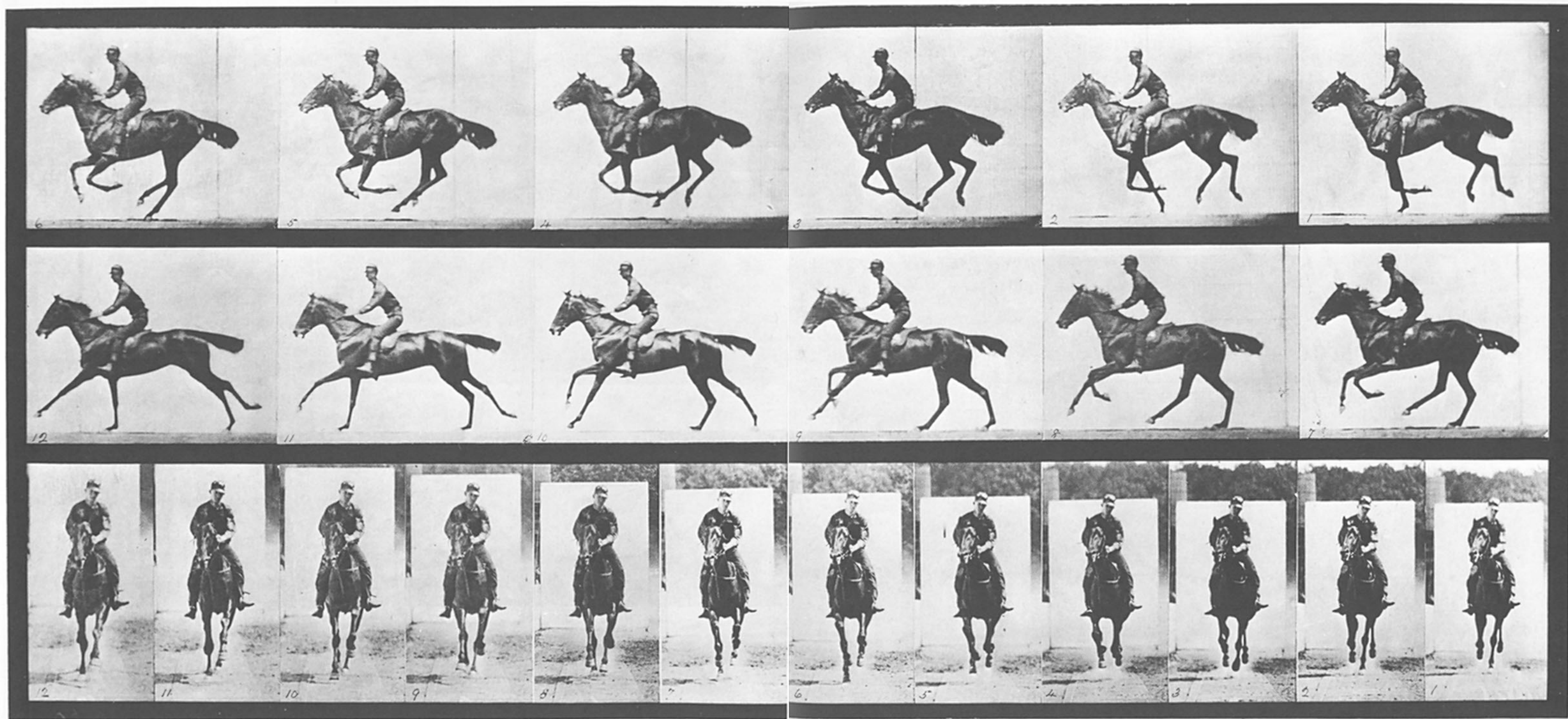
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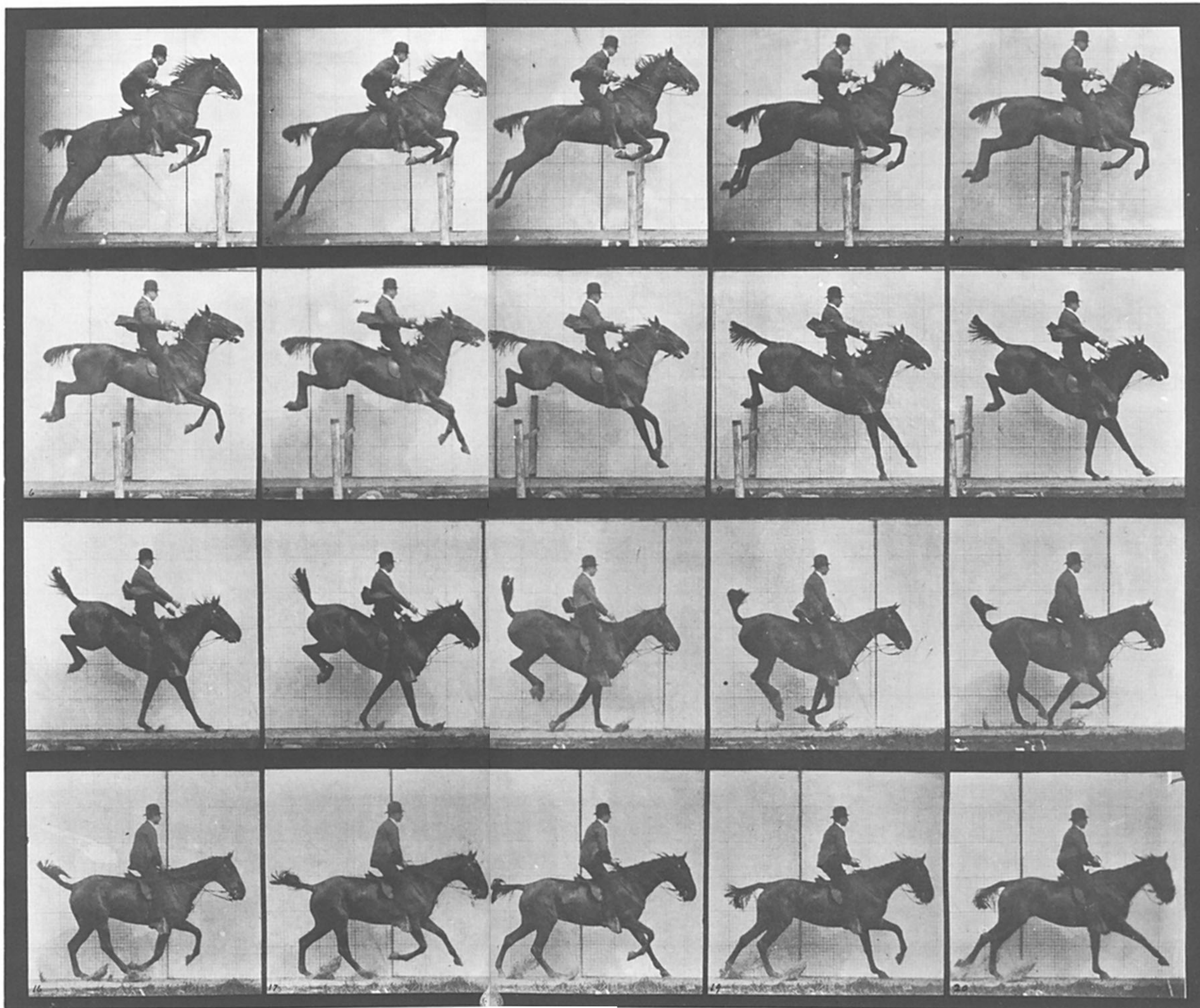


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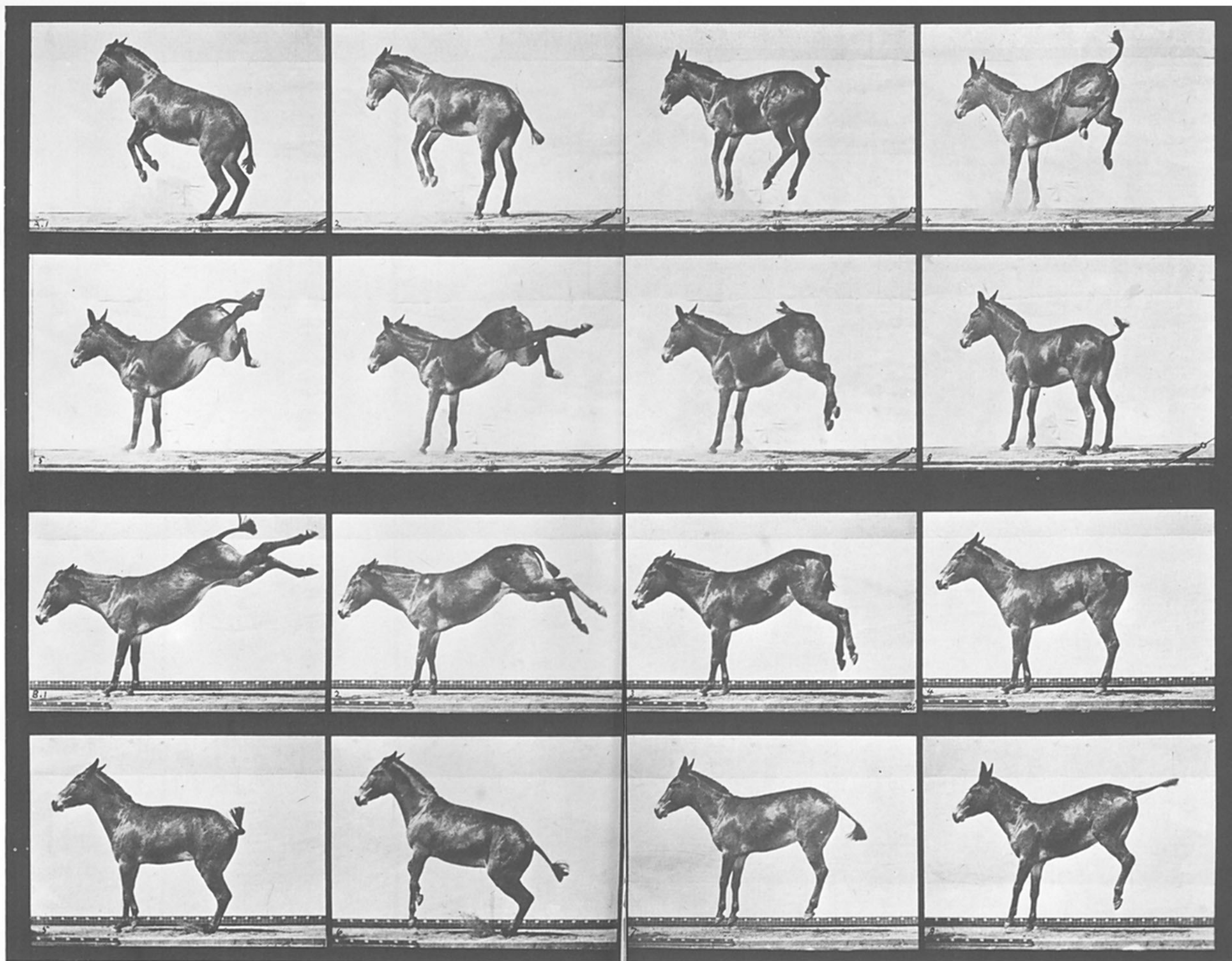


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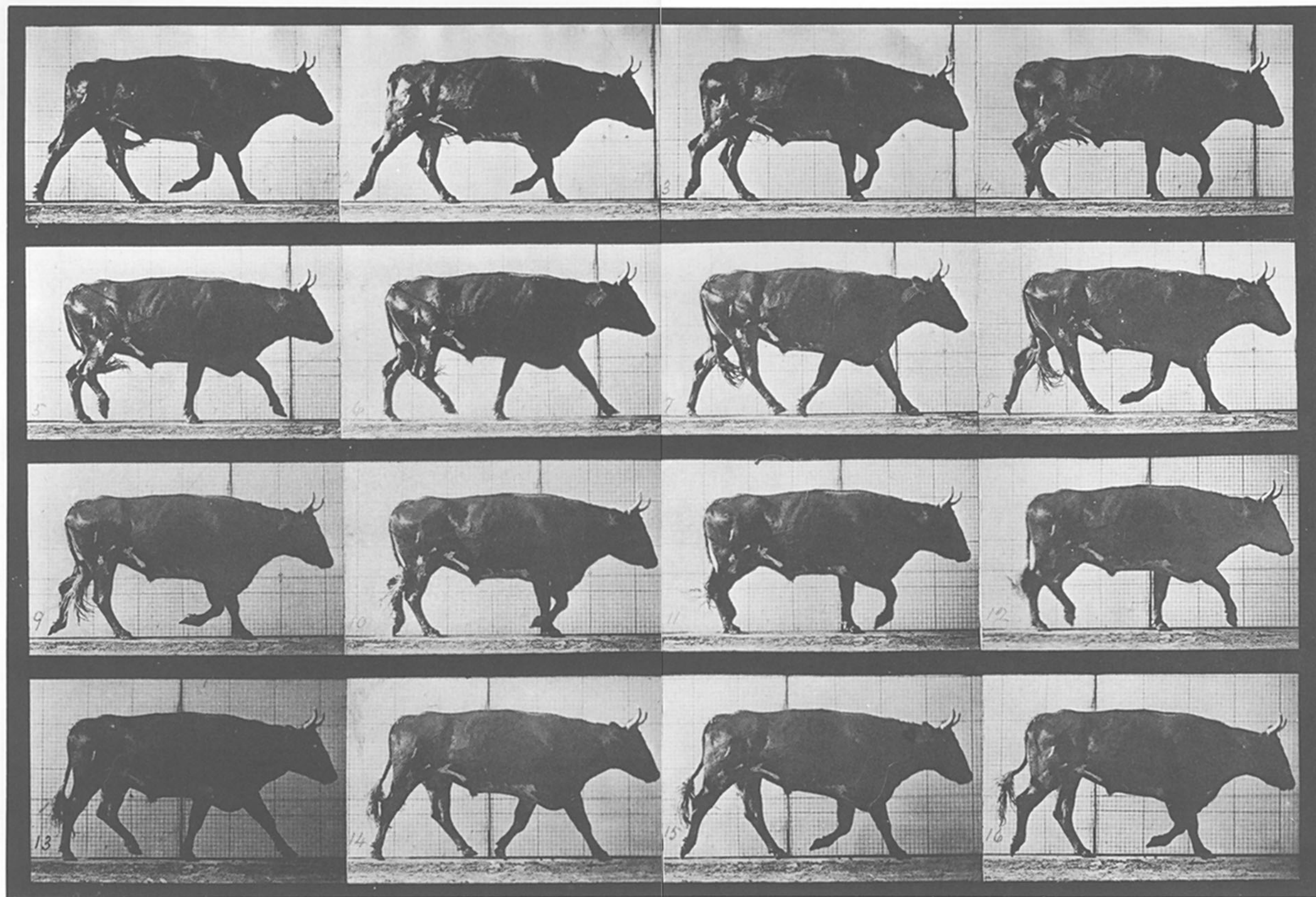




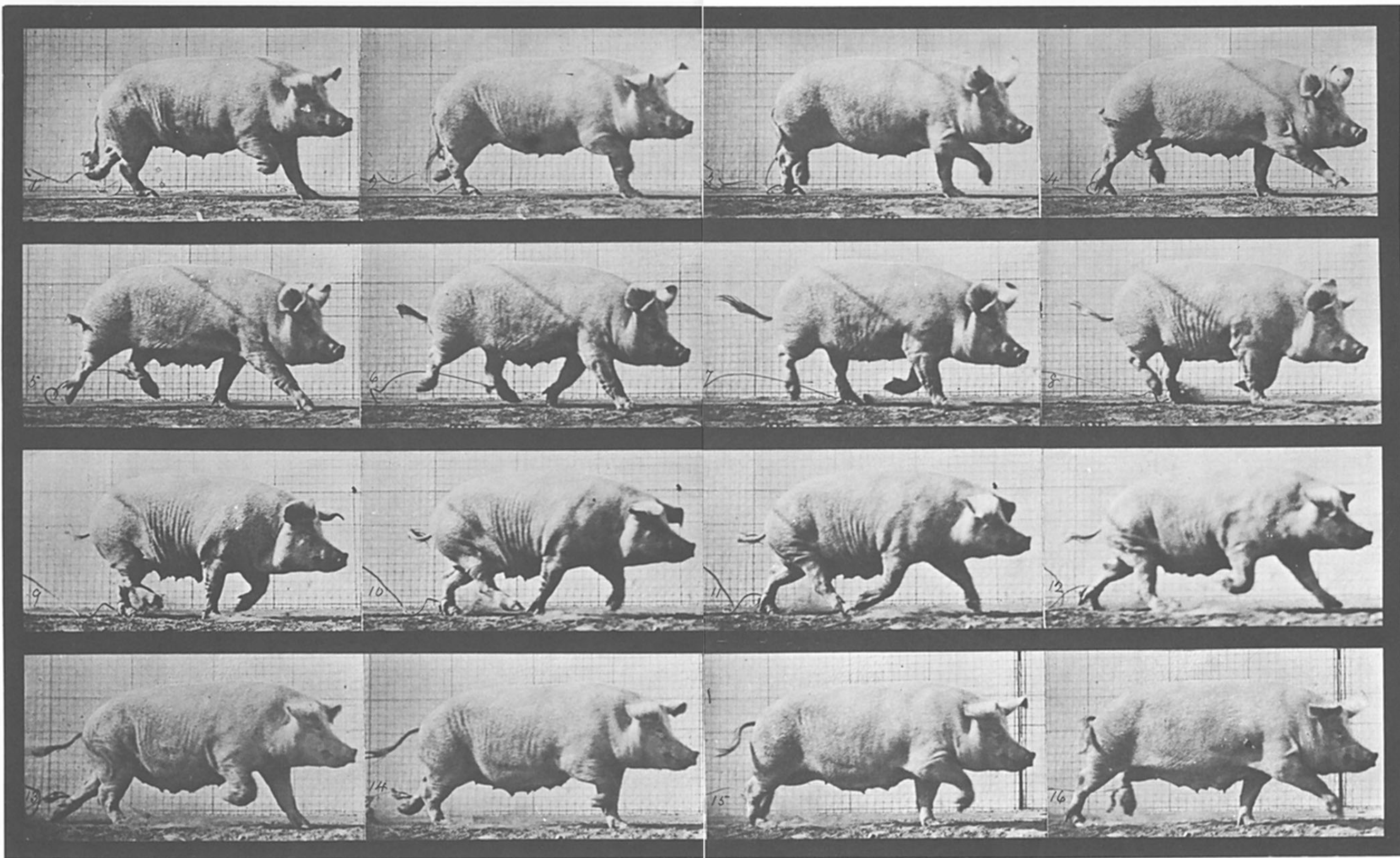
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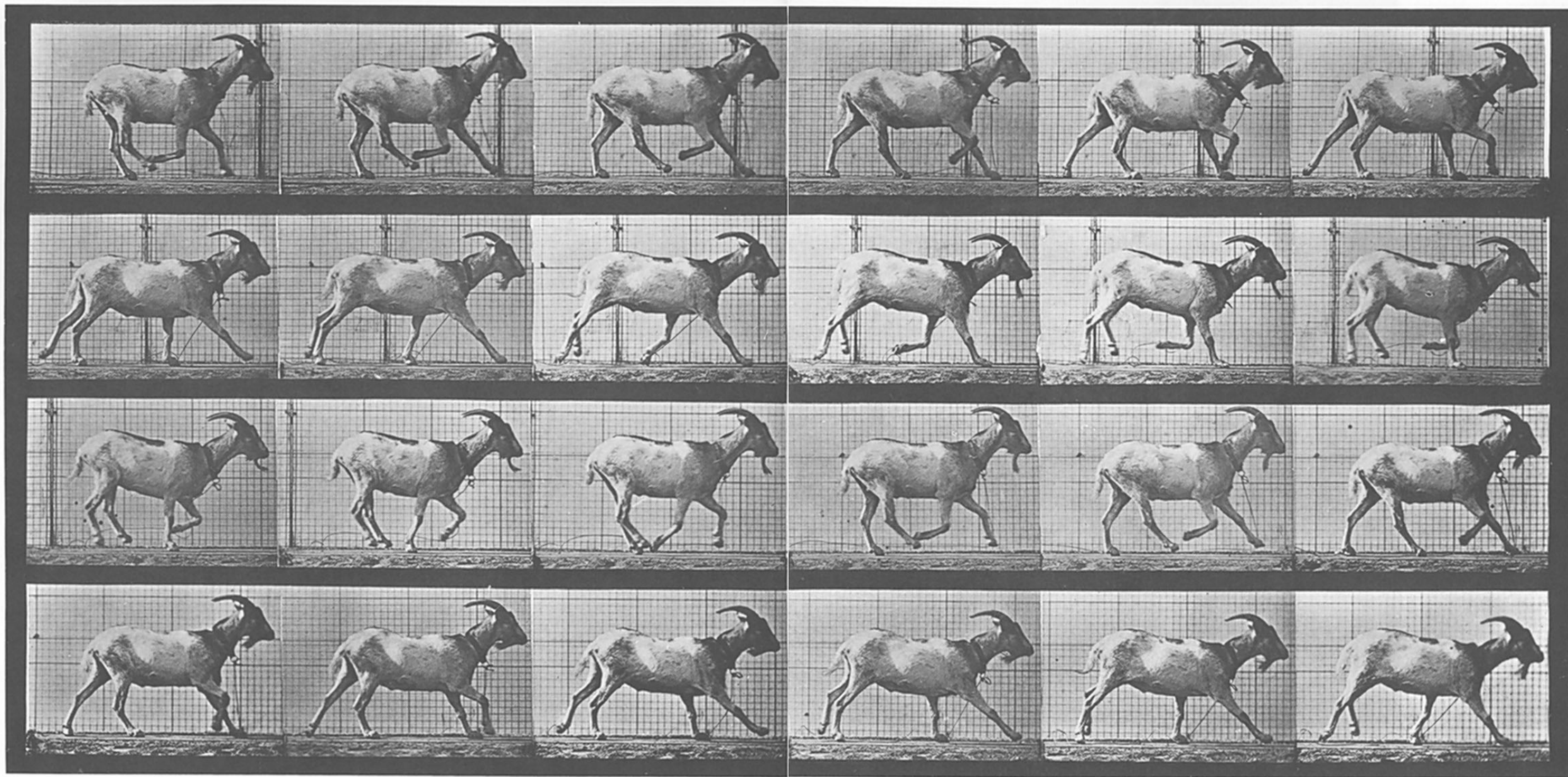
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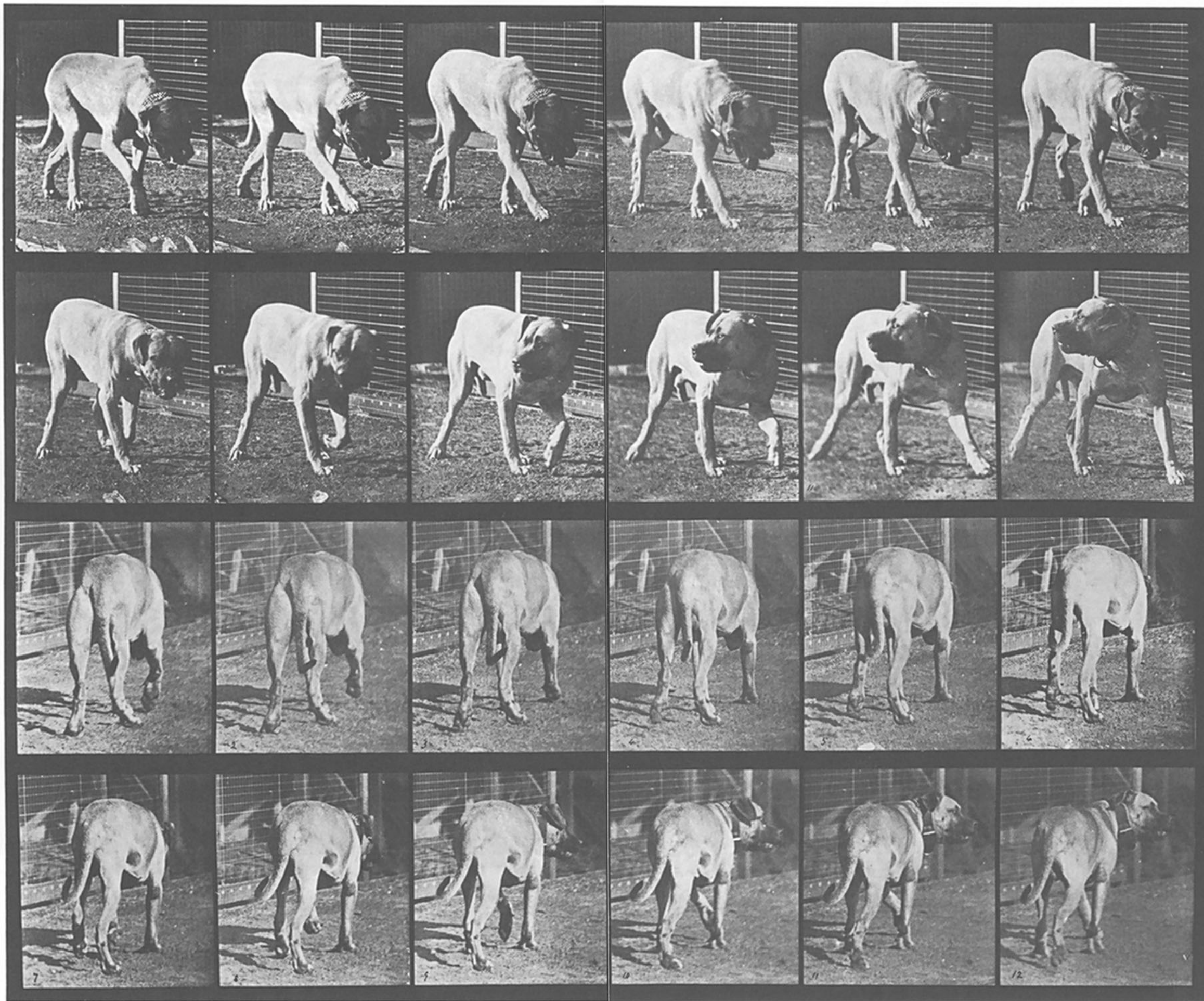
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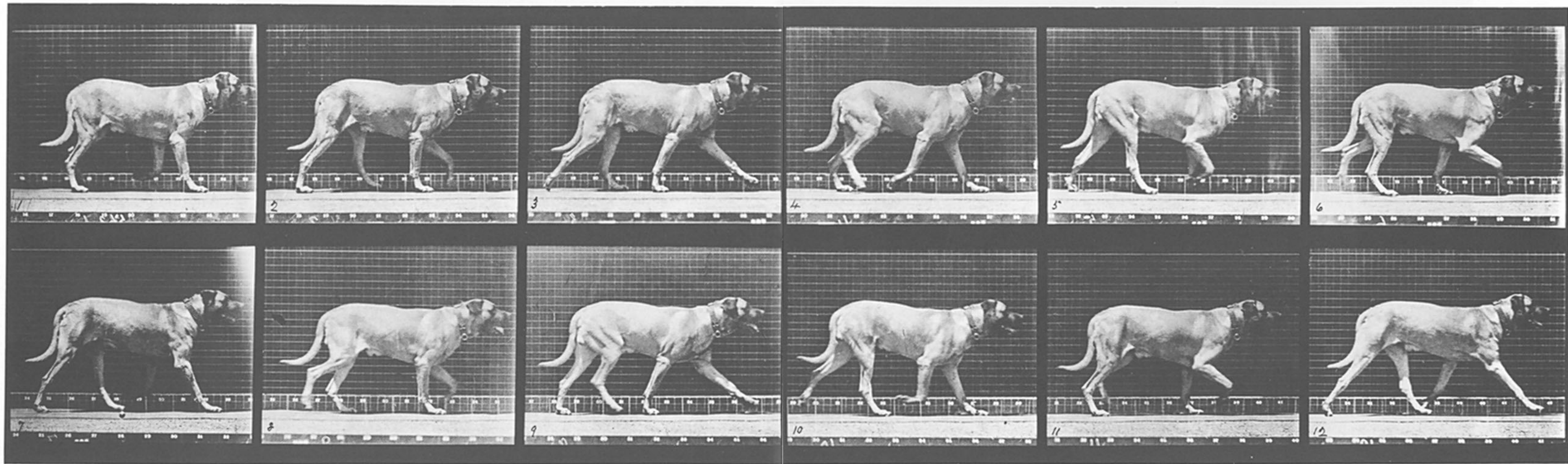
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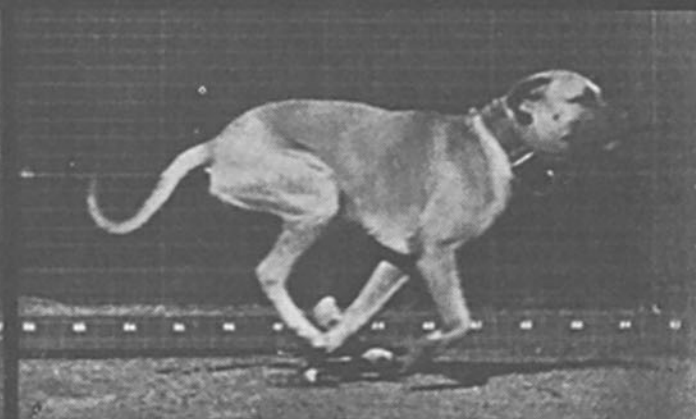
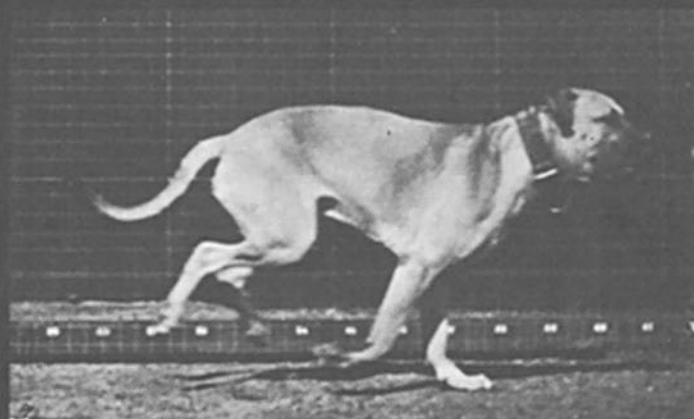
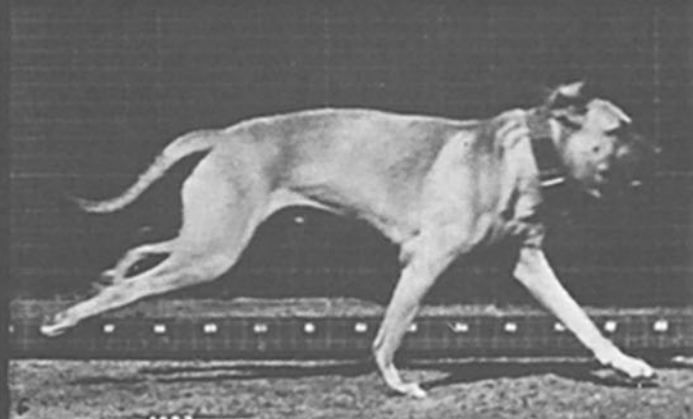
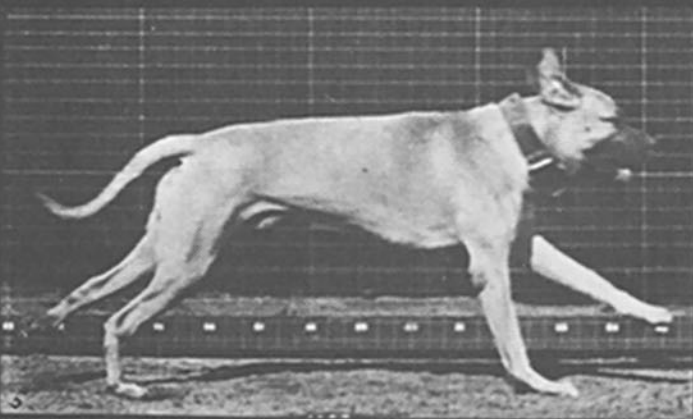
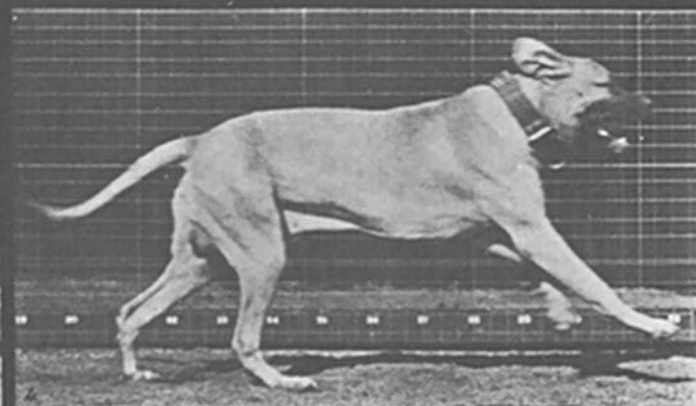
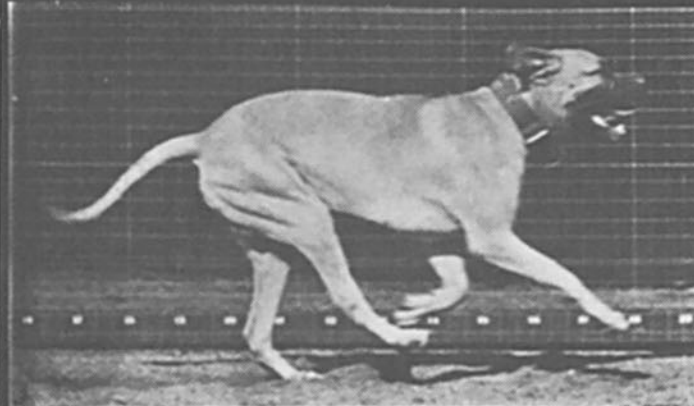
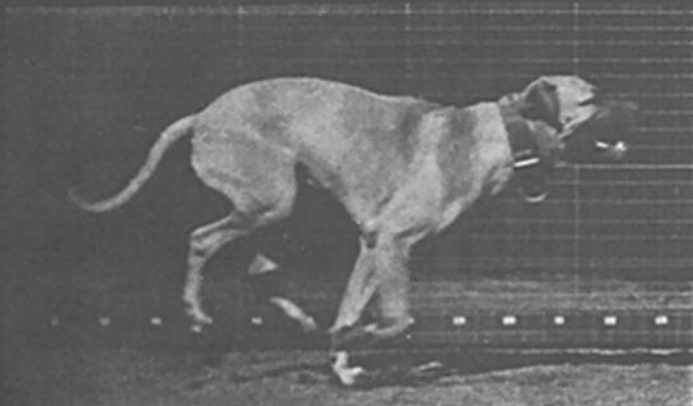
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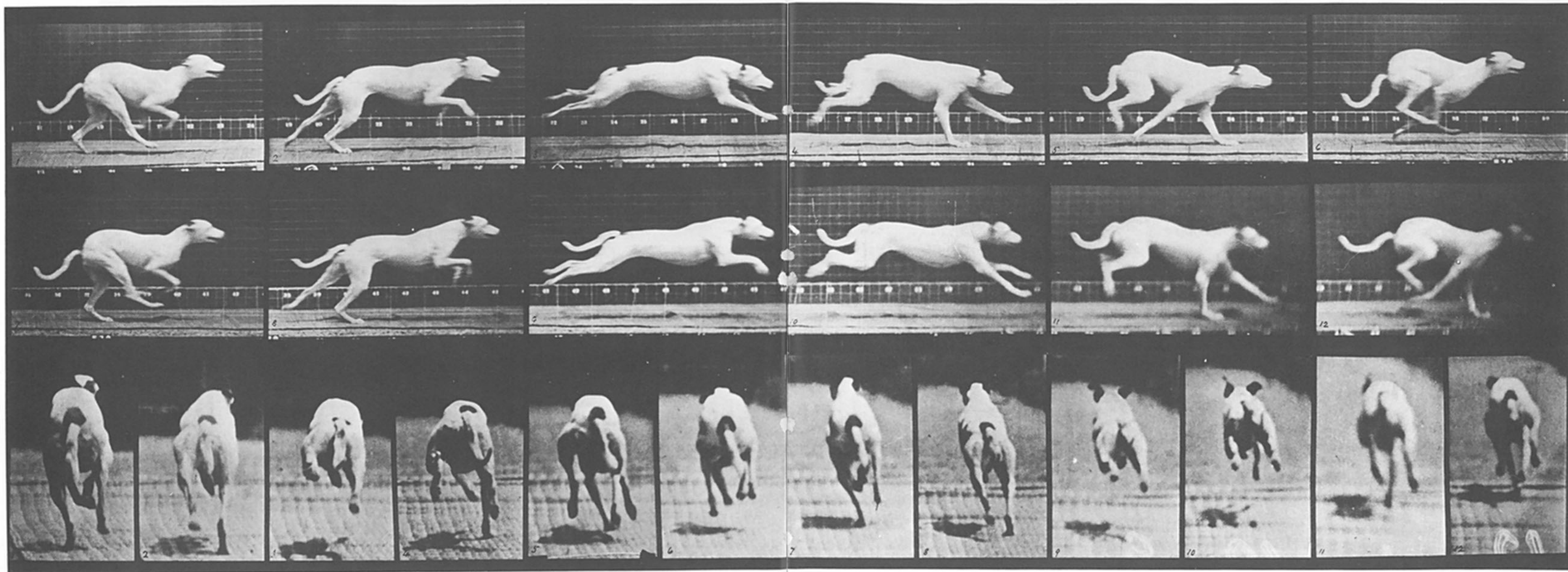


19. "Dread" walking, interrupted.

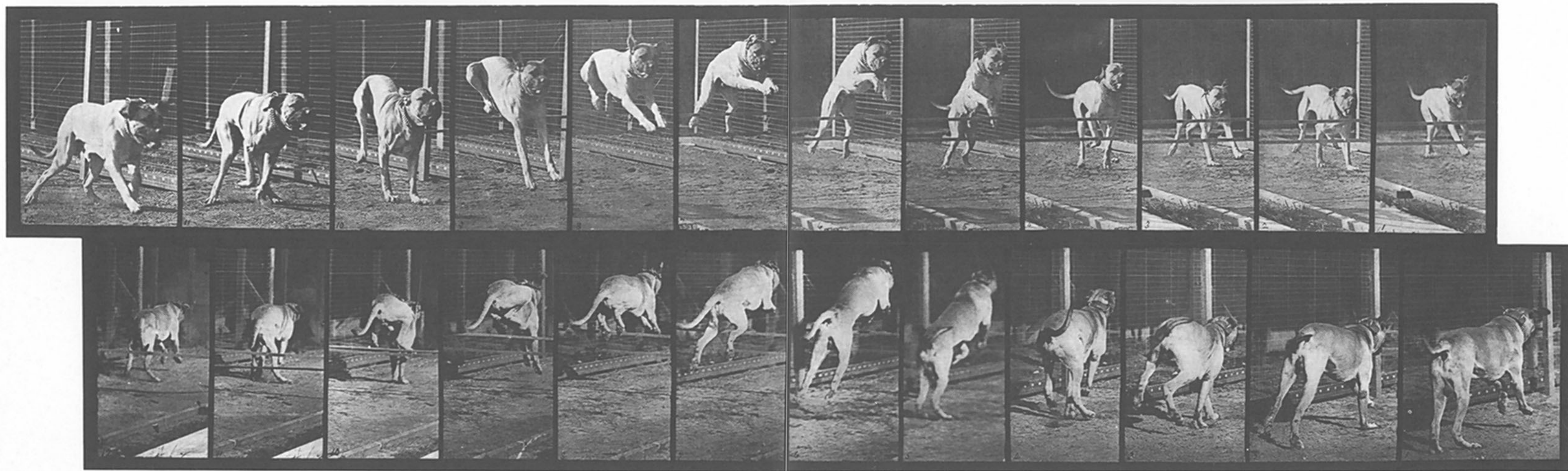


20. "Smith" trotting.

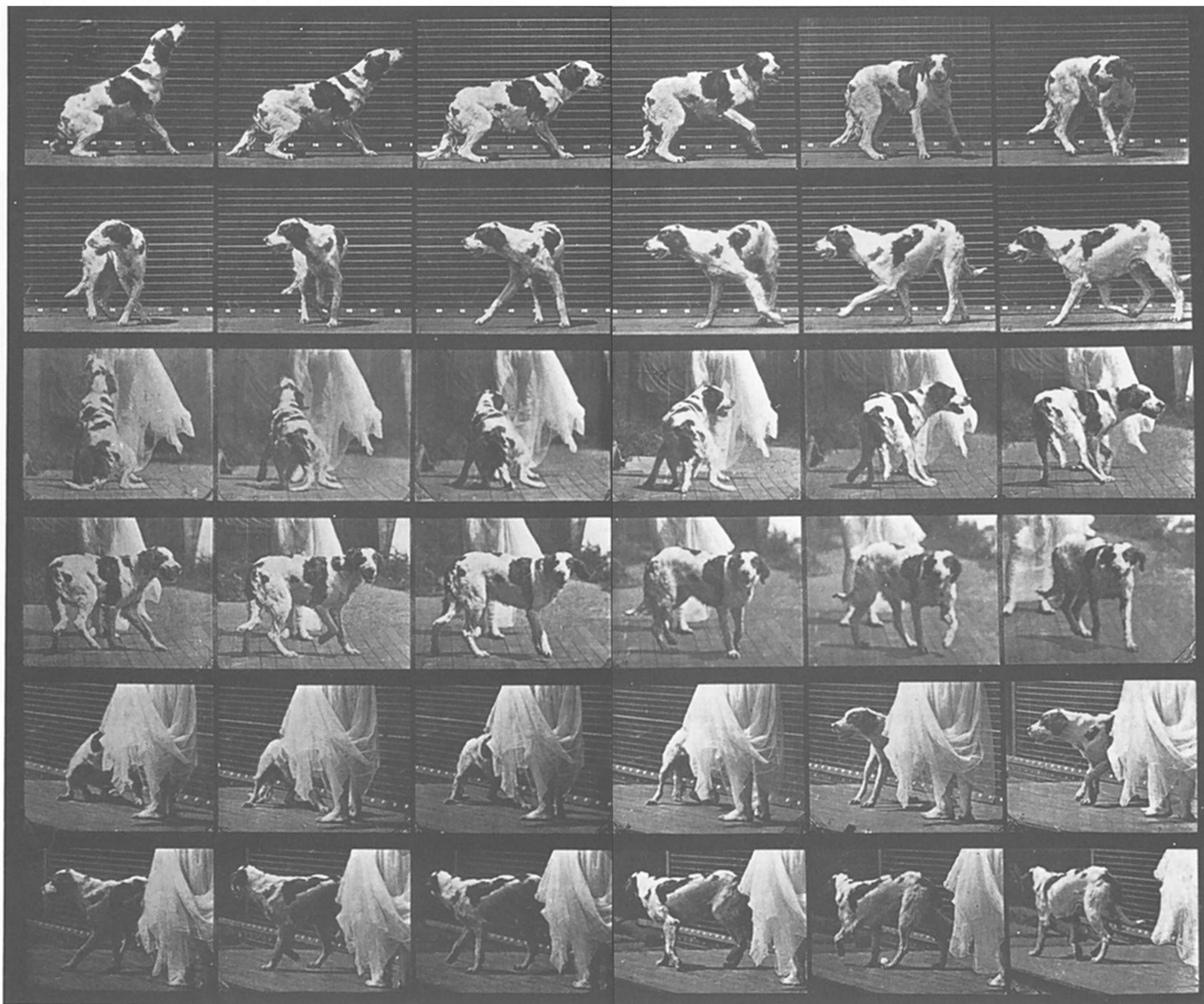




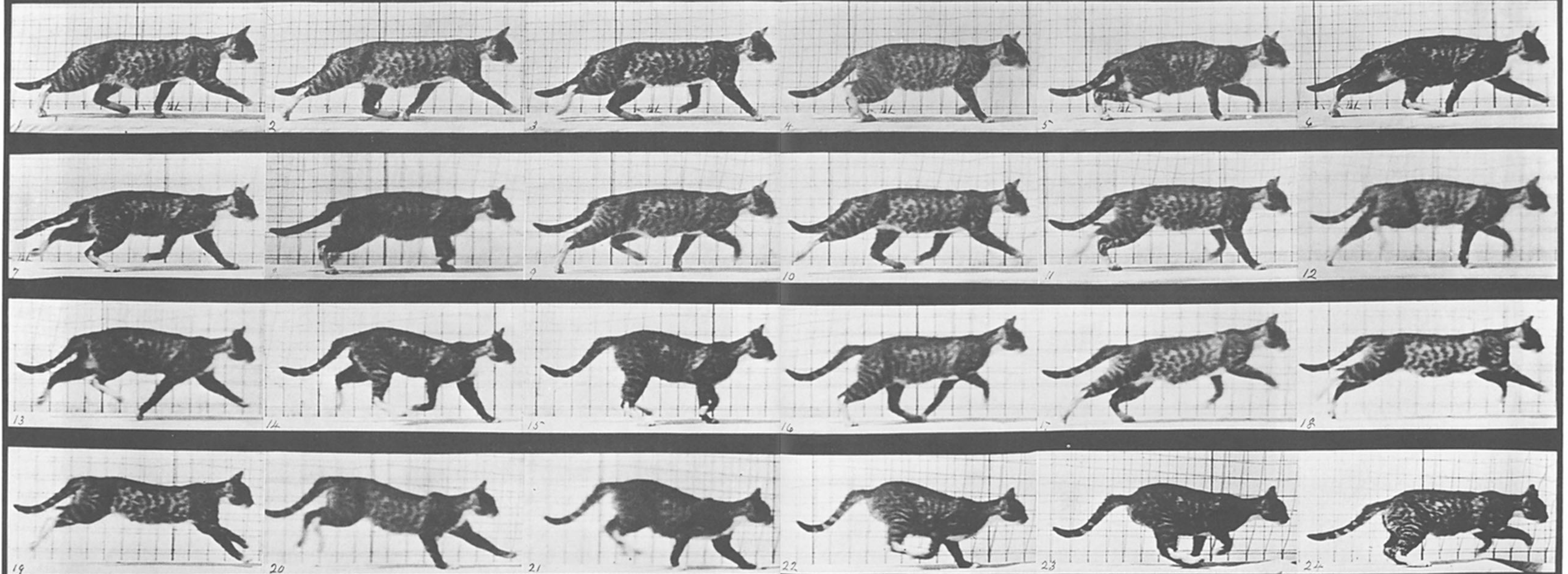
22. "Maggie" galloping.



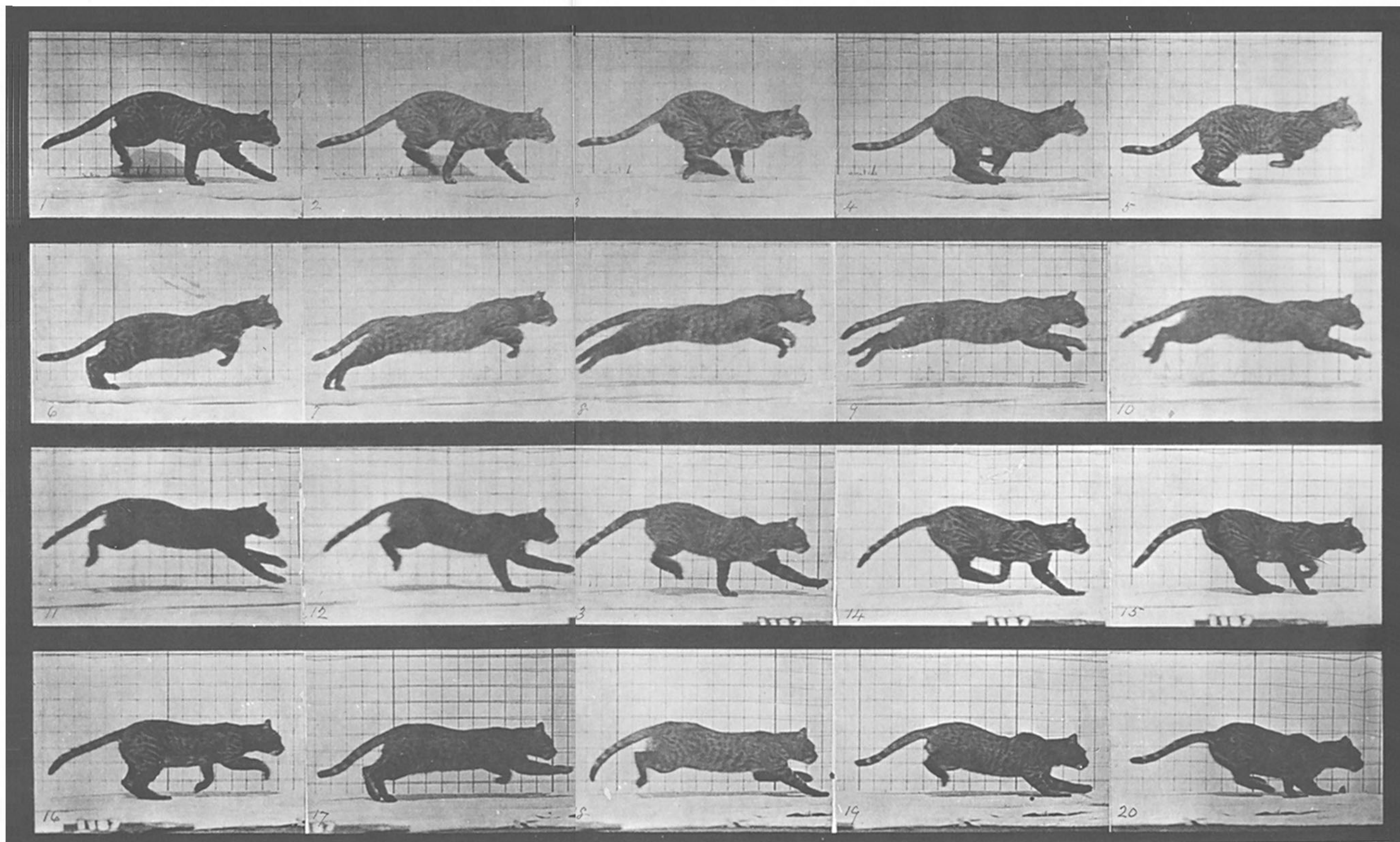
23. "Dread" jumping hurdle.



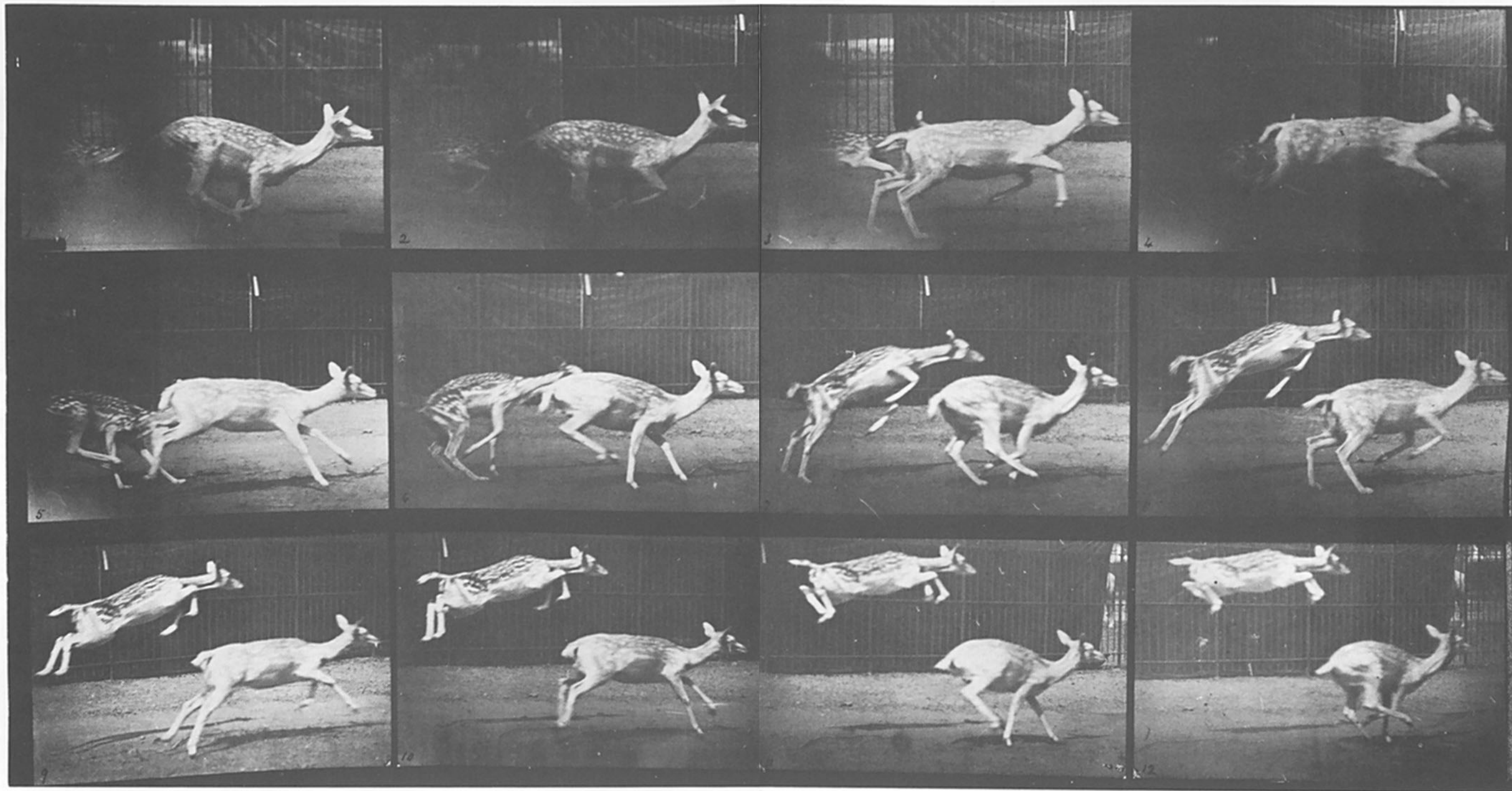
24. "Kate" turning around.



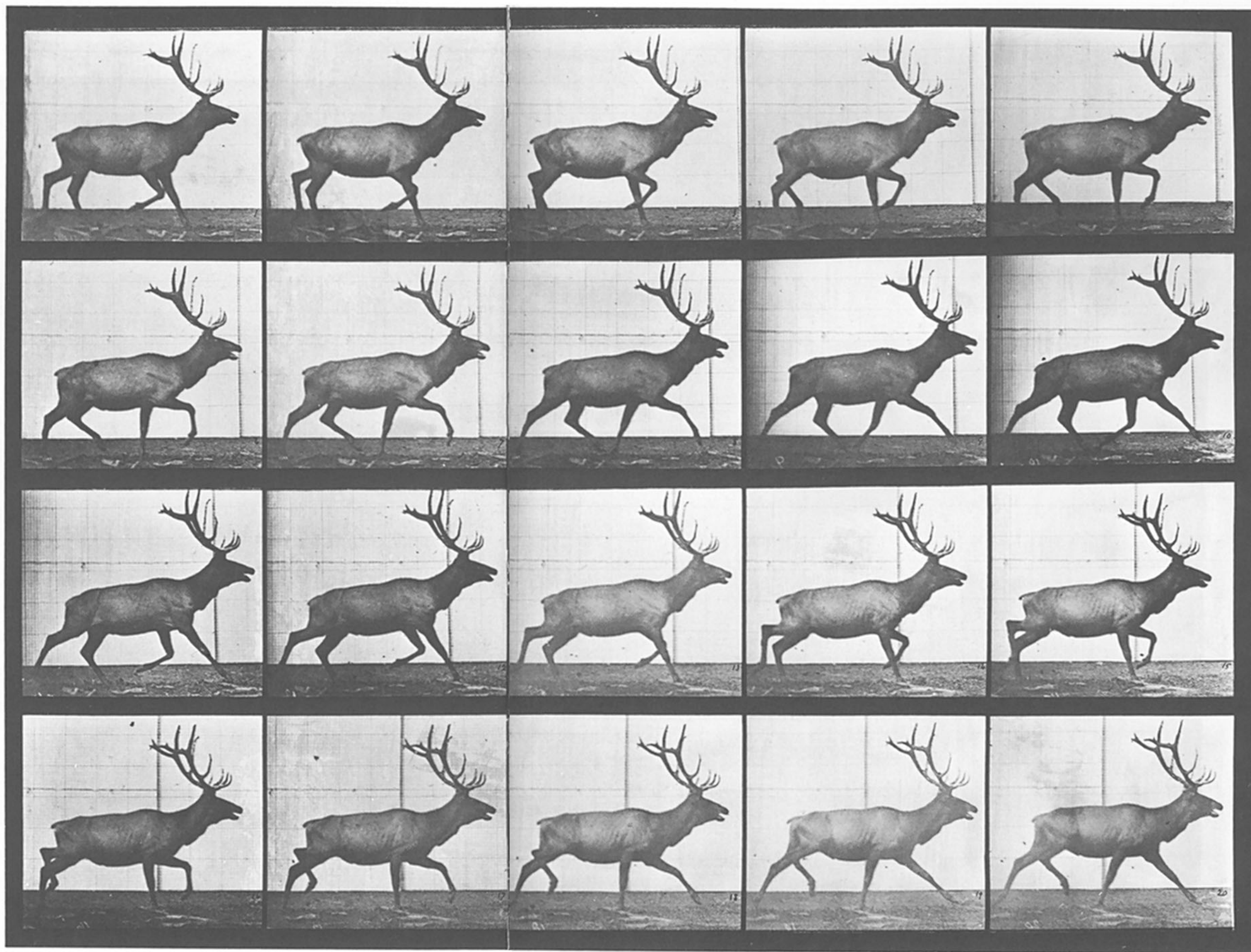
26. Cat trotting, changing to a gallop.



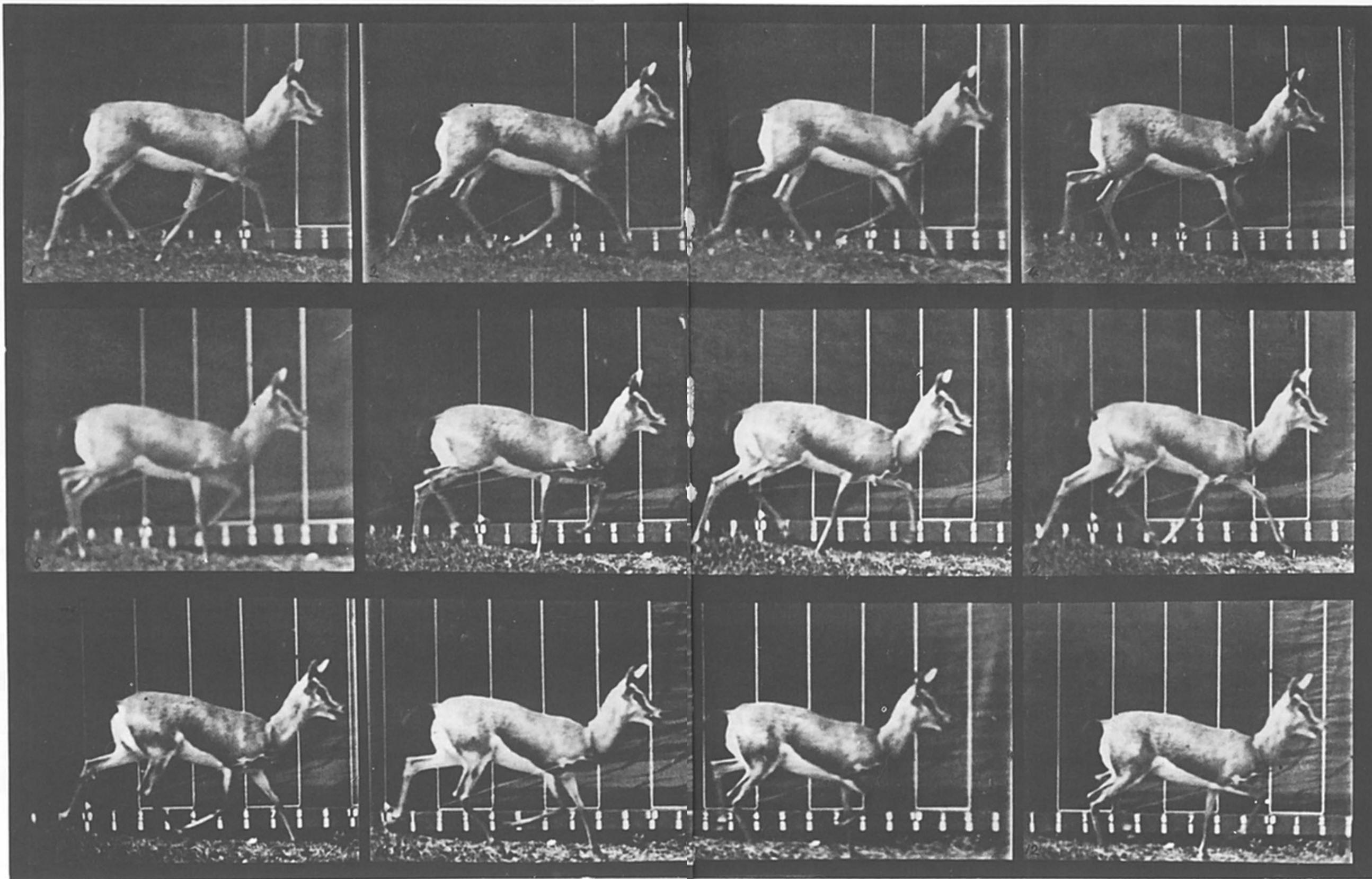
27. Cat galloping.



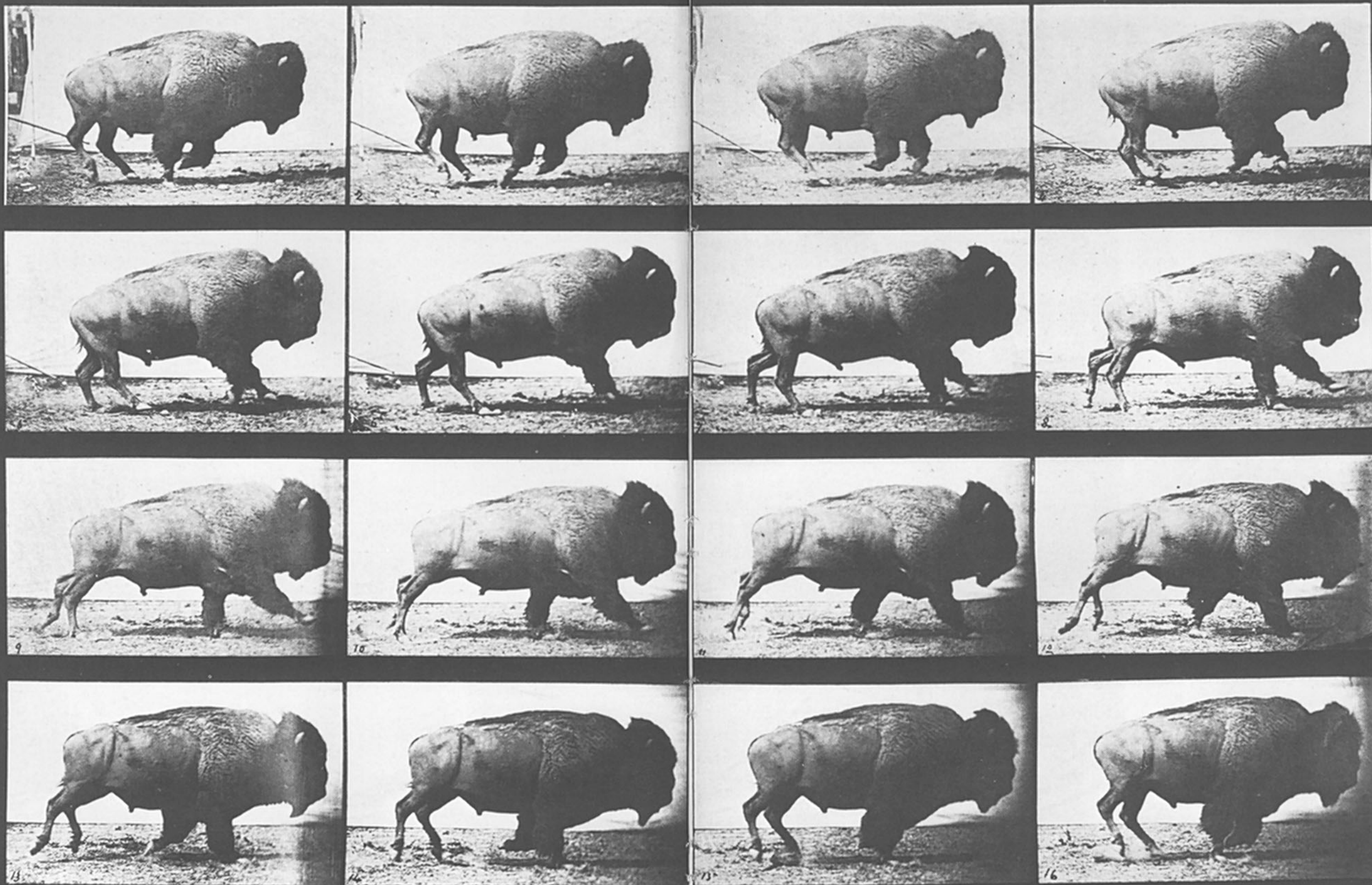
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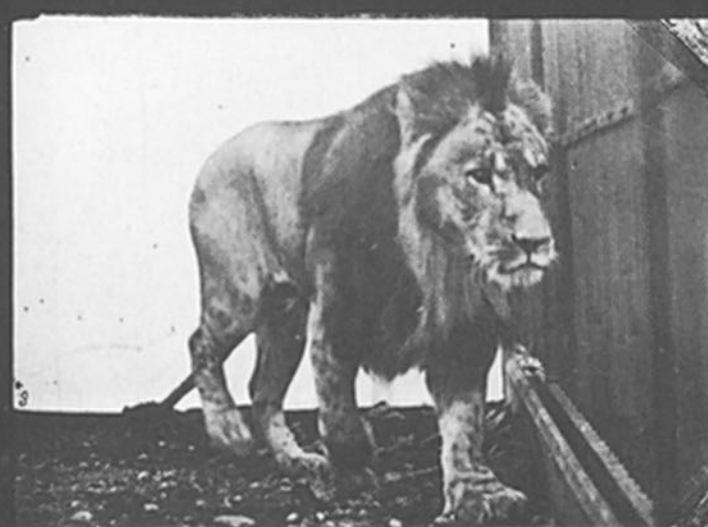
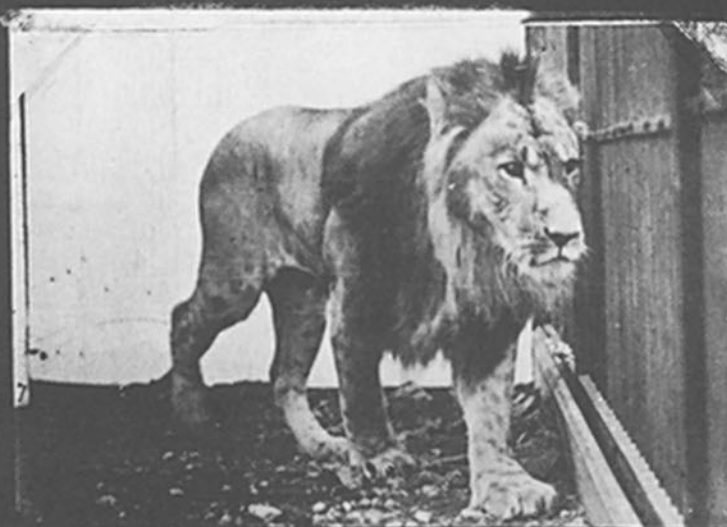
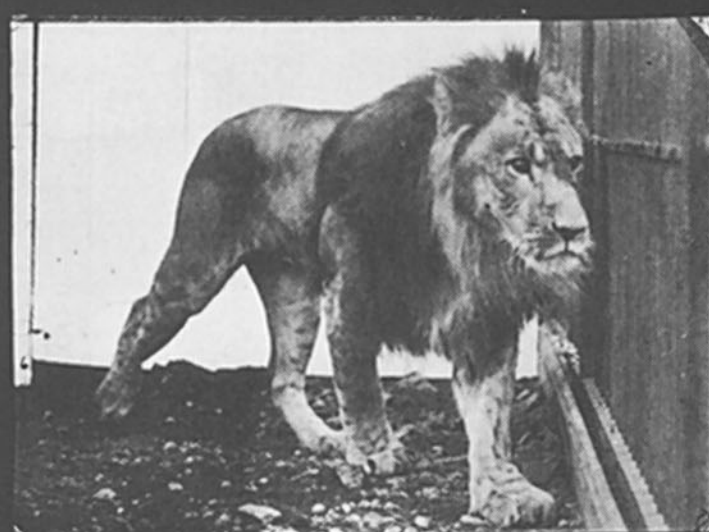
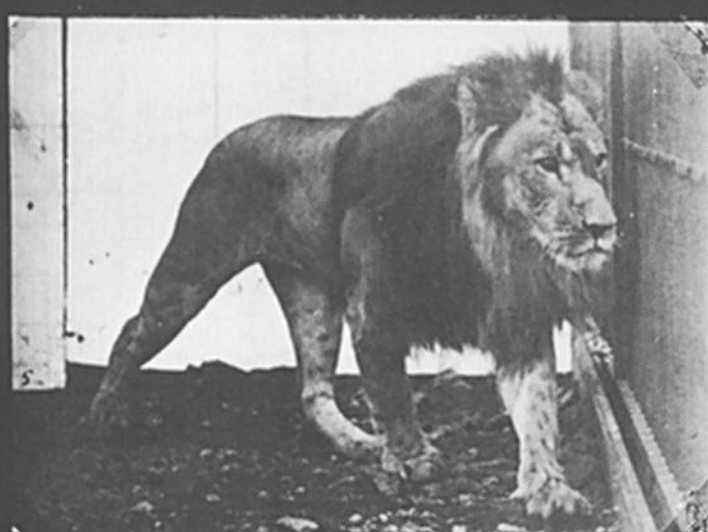
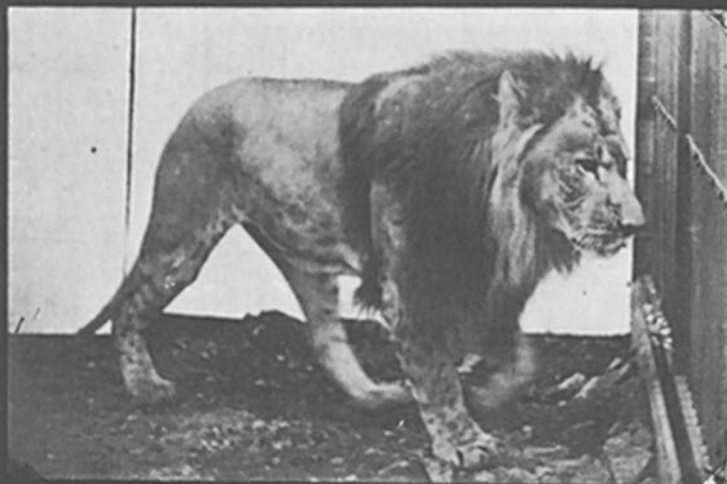


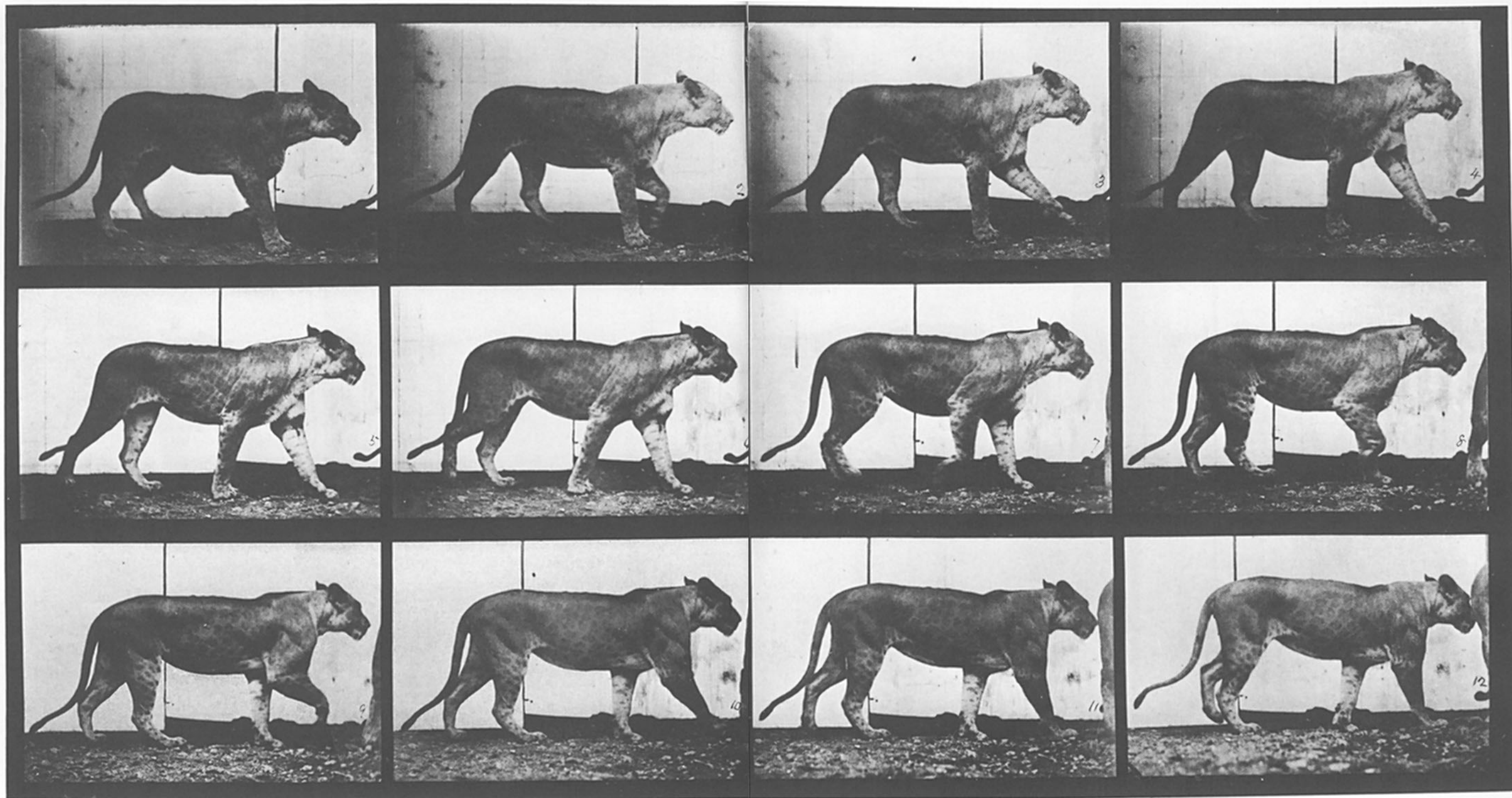
29. Elk trotting.



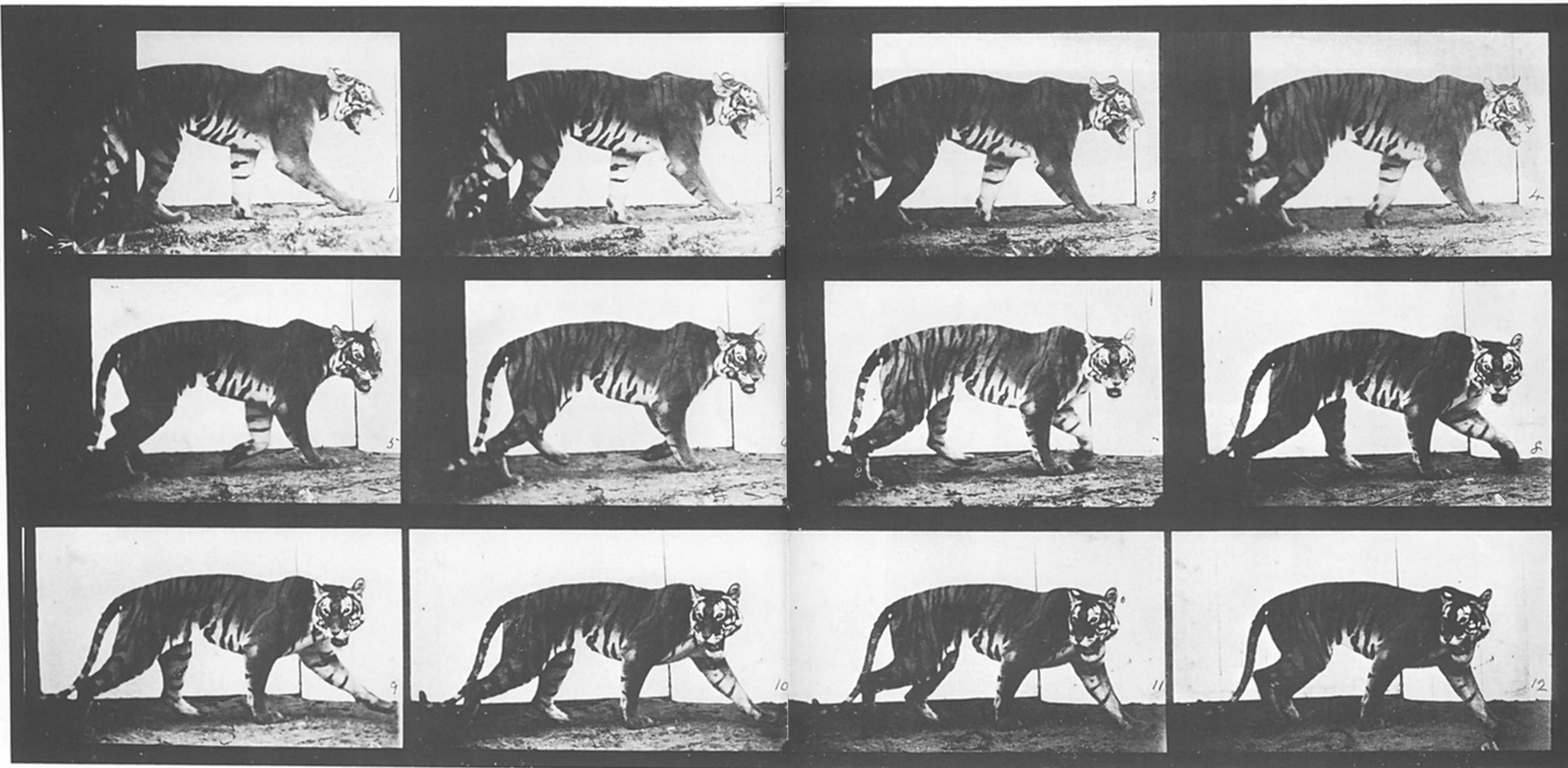
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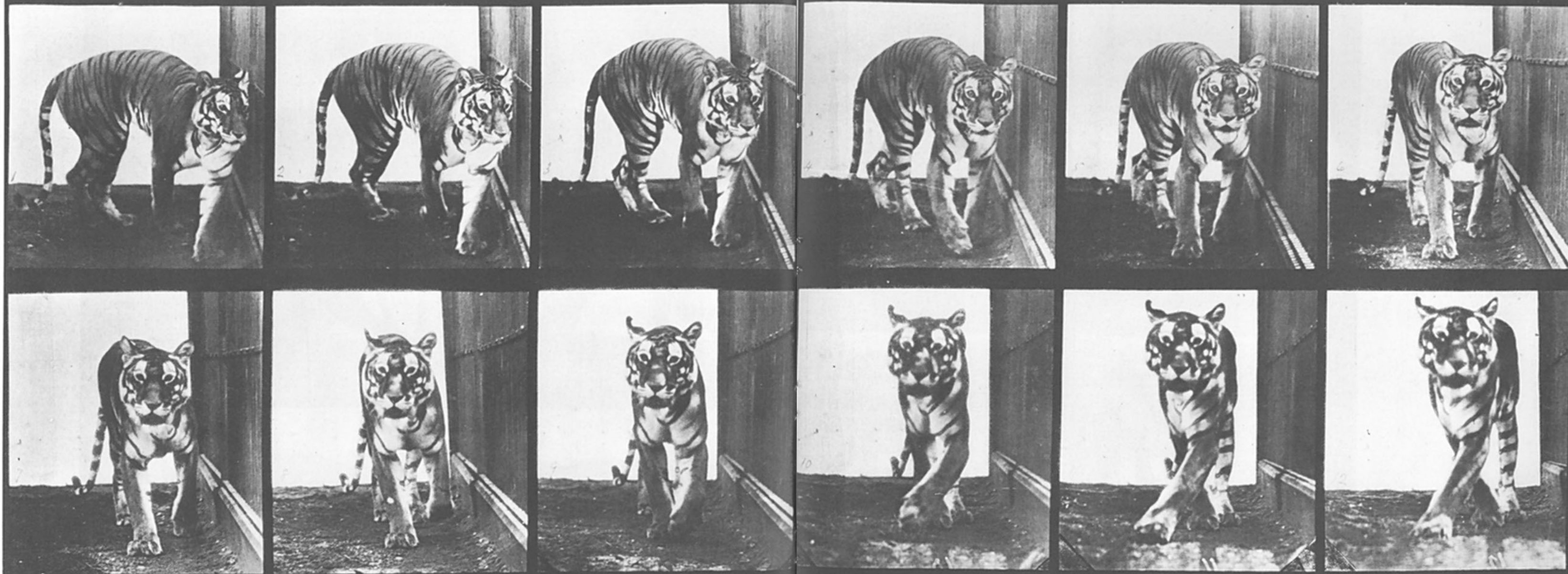




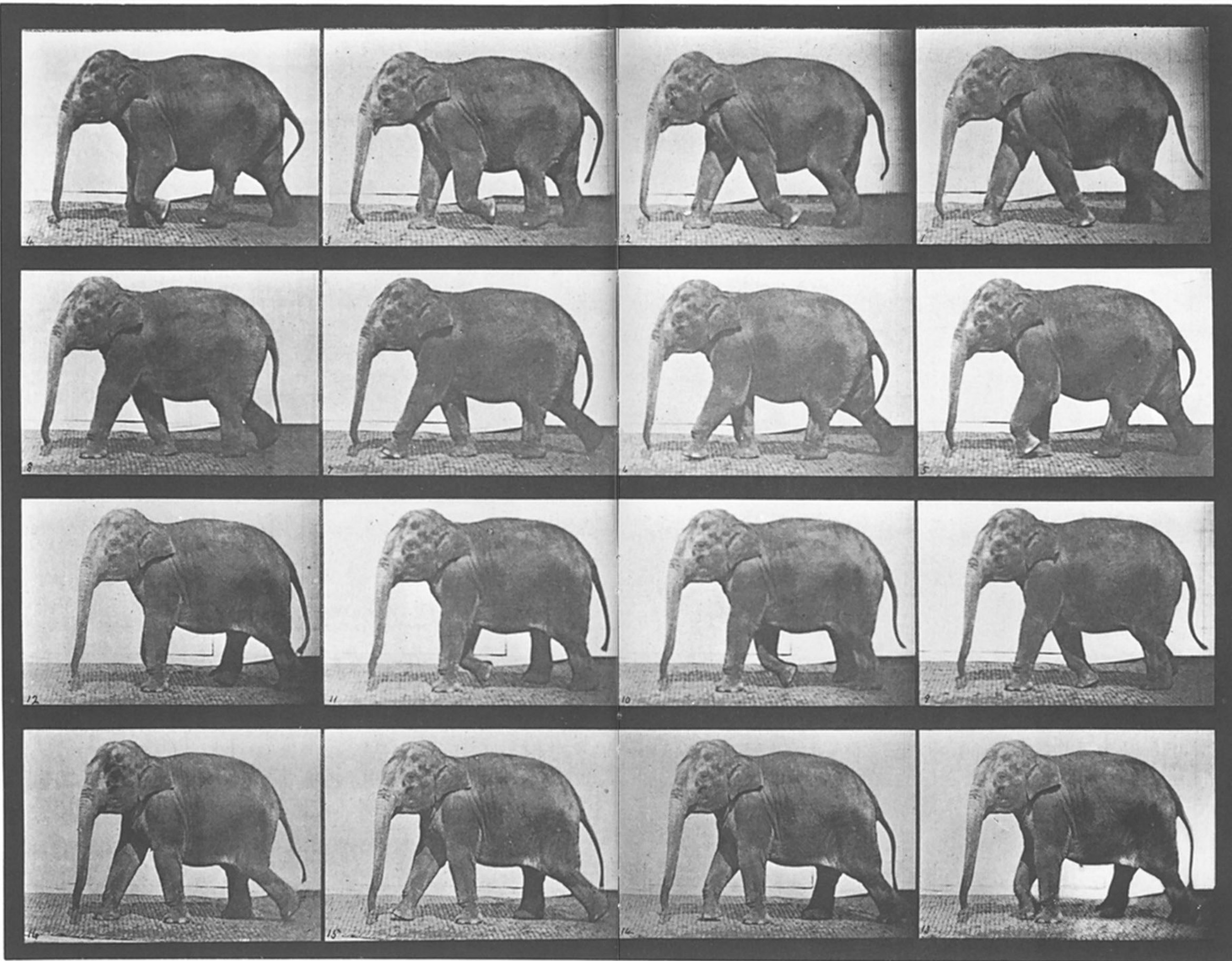
33. *Lioness walking.*

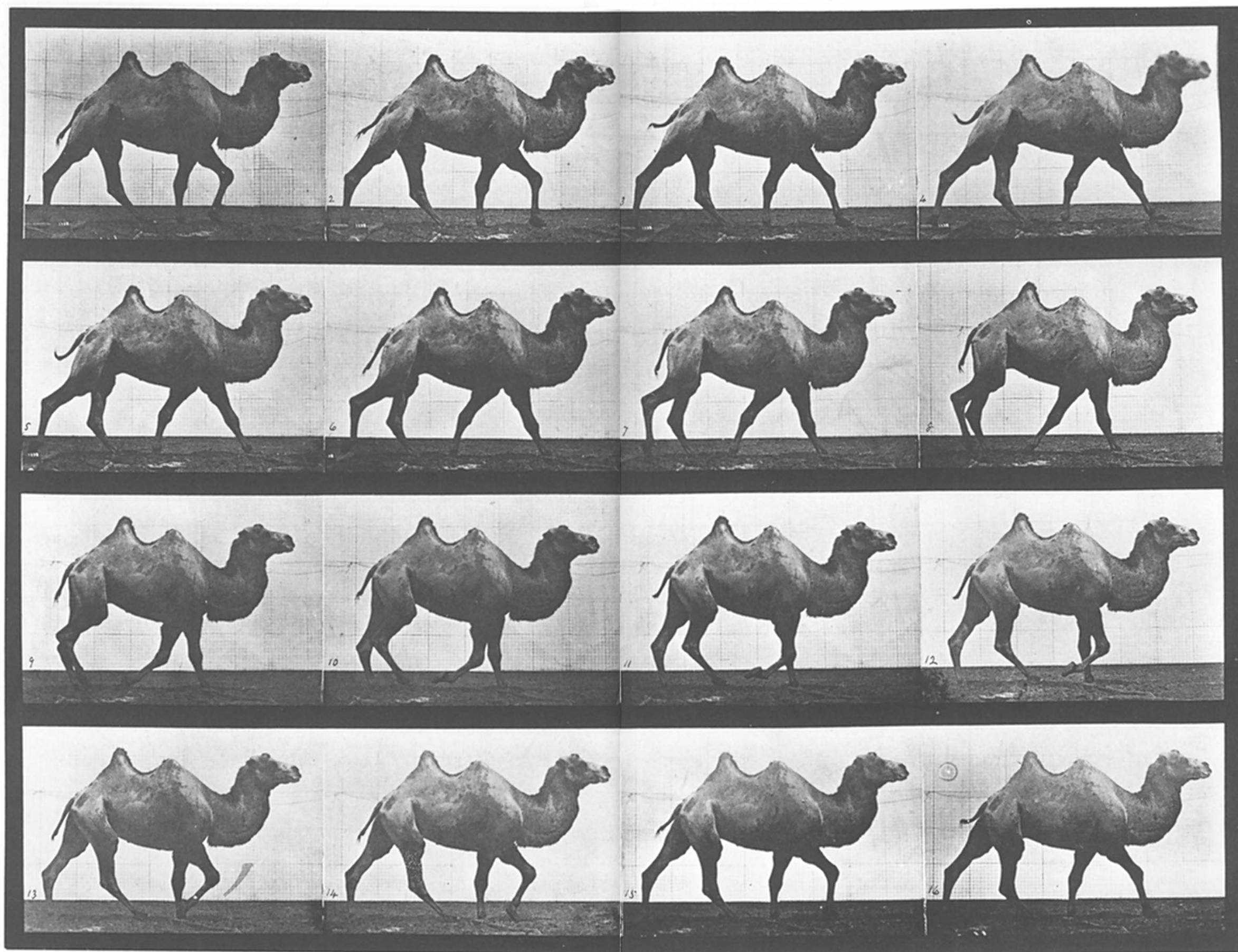


34. Tigress walking and turning around.

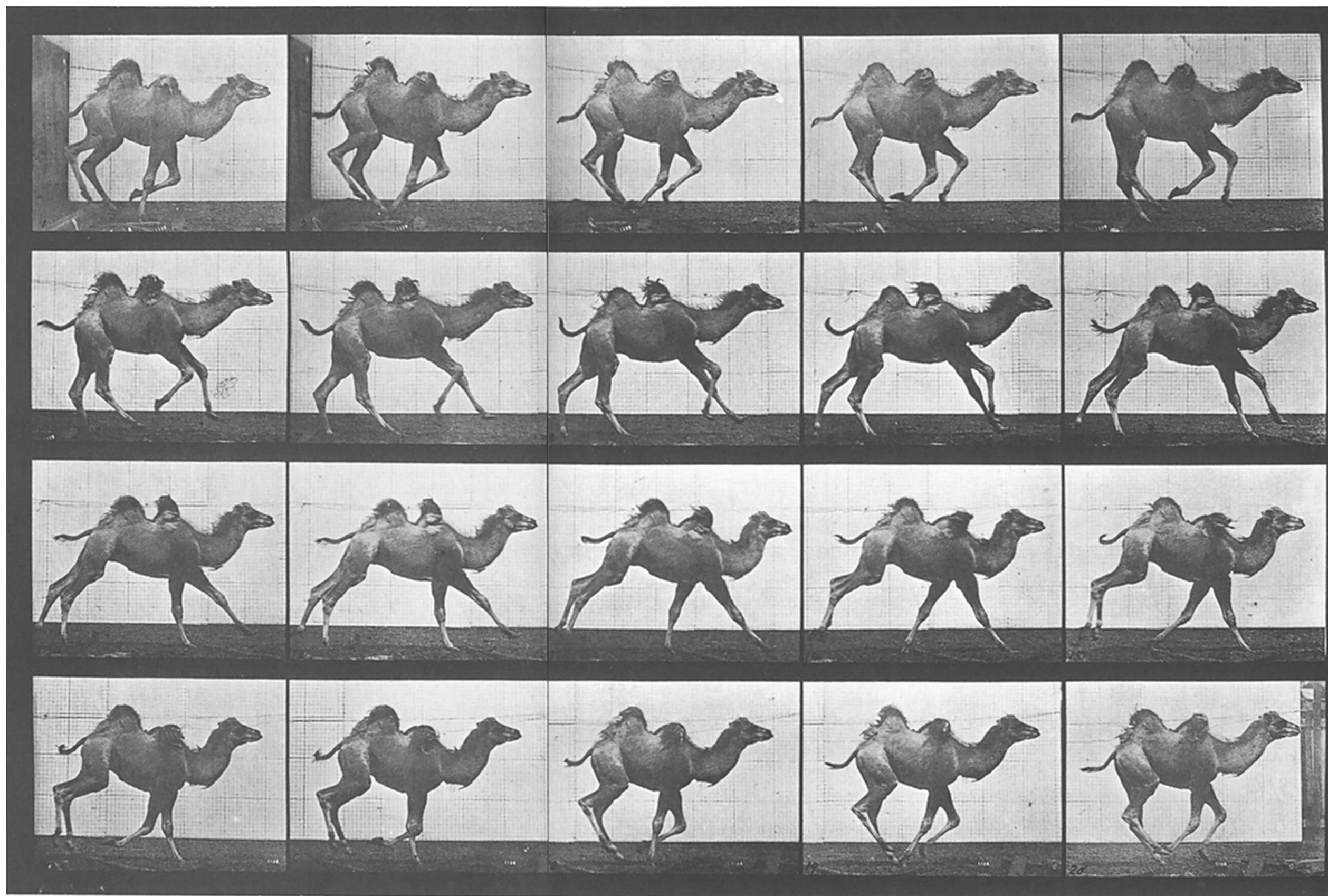


35. Tigress walking and turning around.

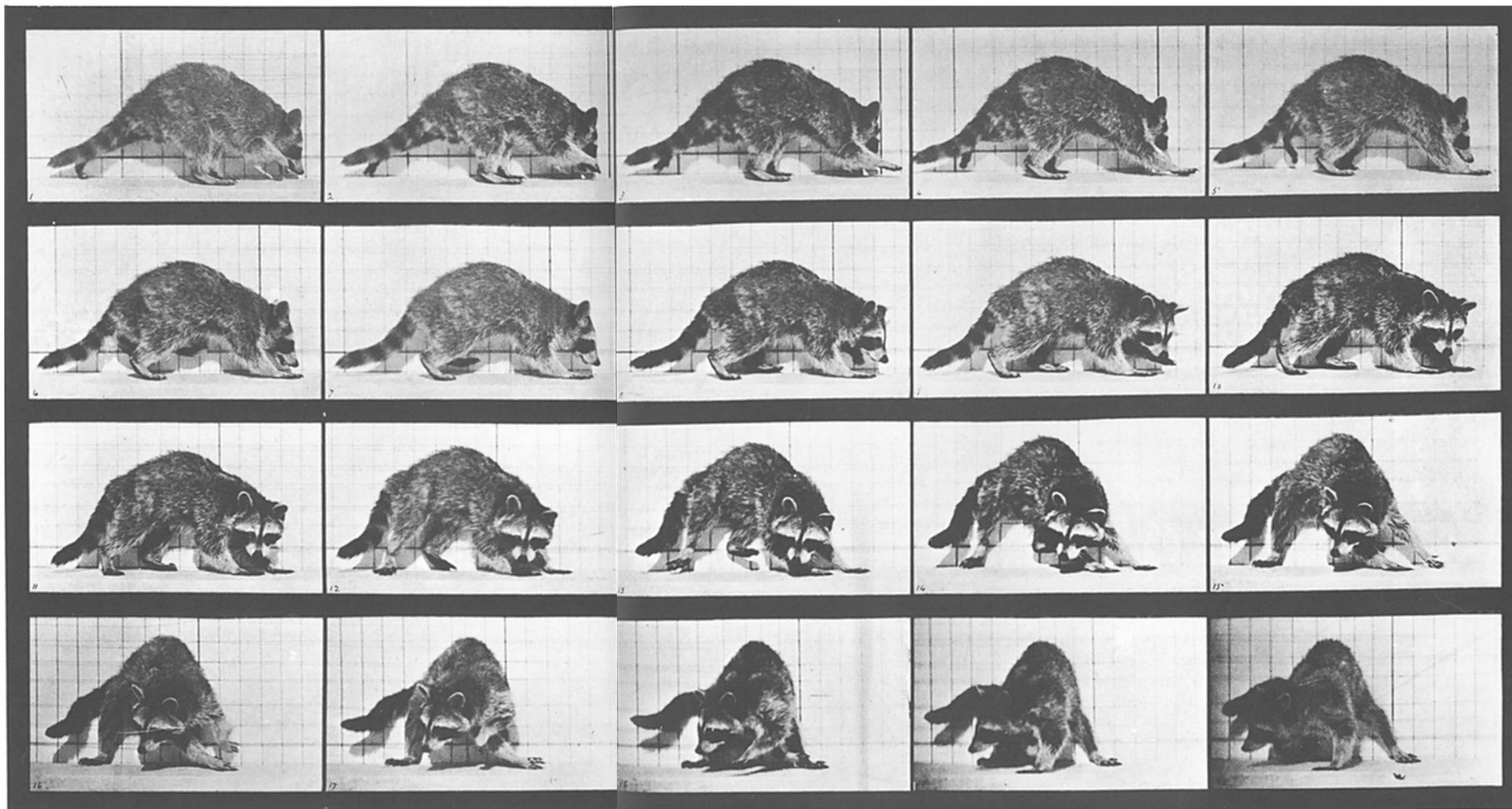




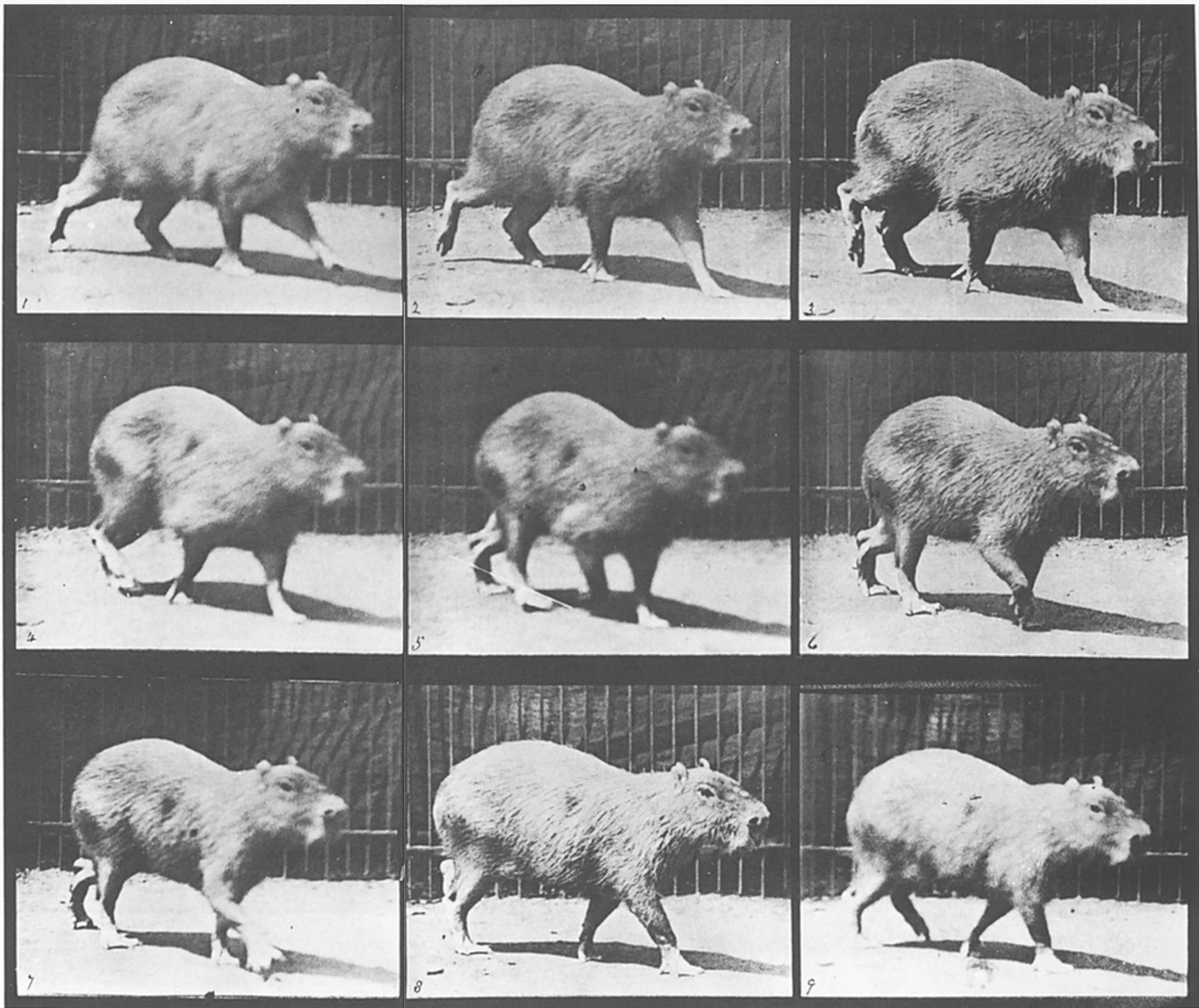
37. Bactrian camel walking.



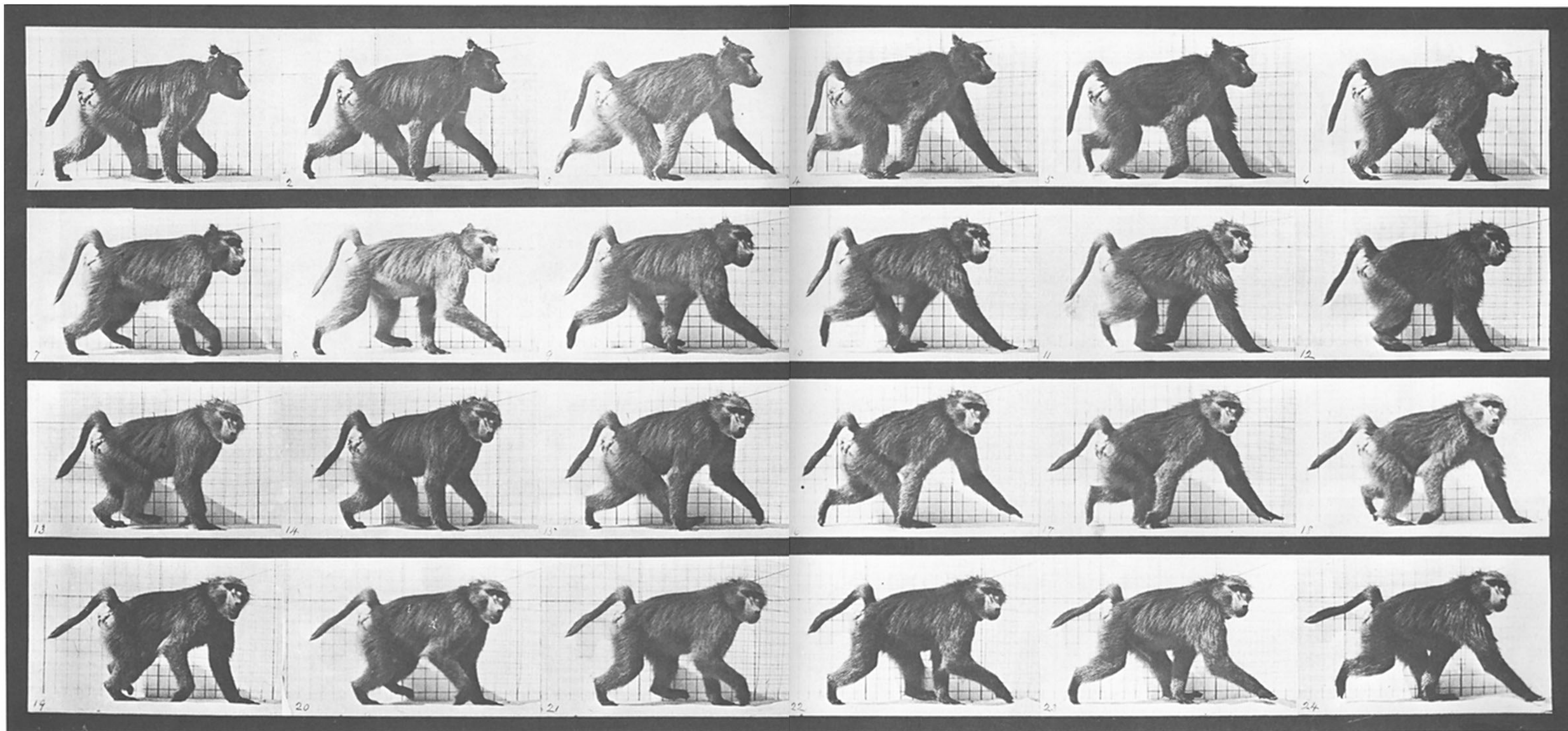
38. Bactrian camel galloping.



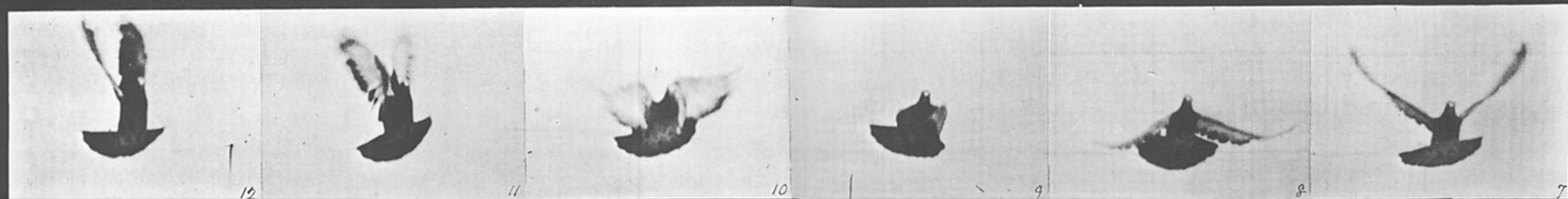
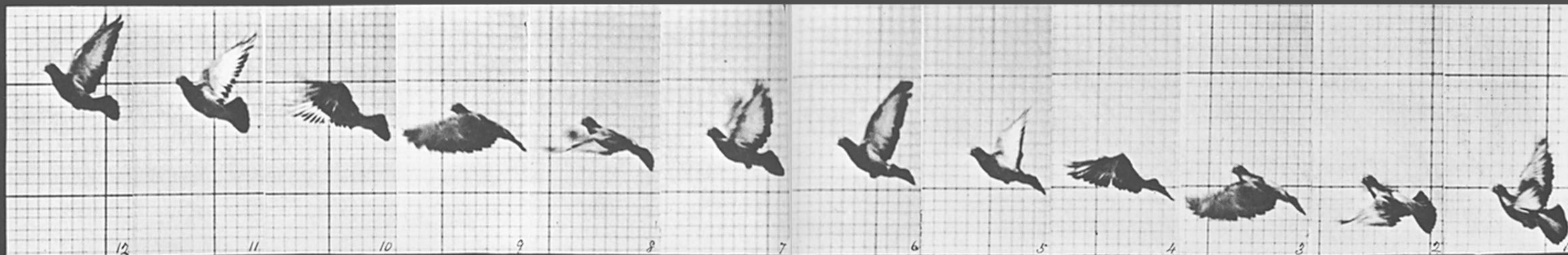
39. Raccoon walking and turning around.

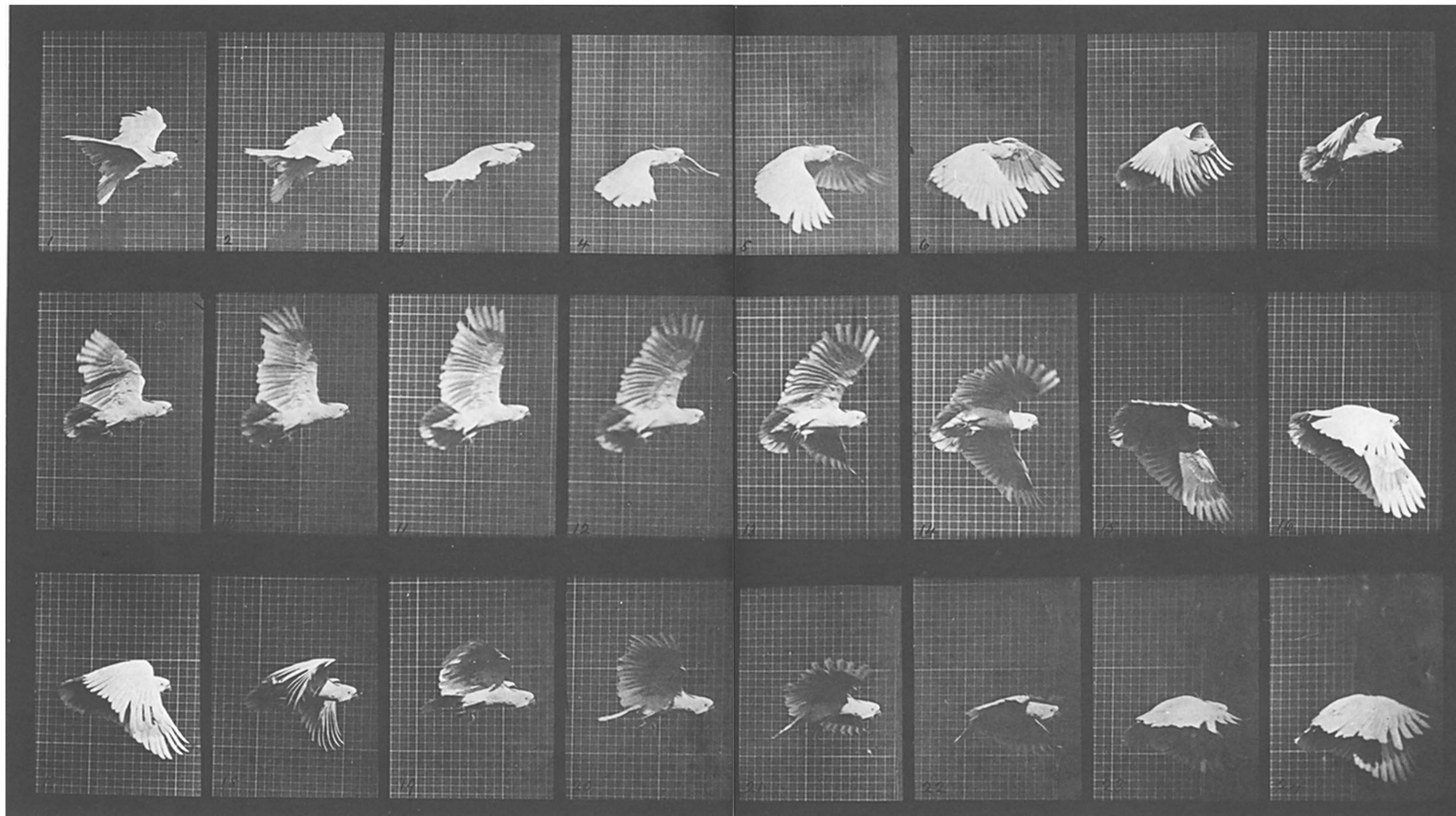


40. *Capybara* walking.

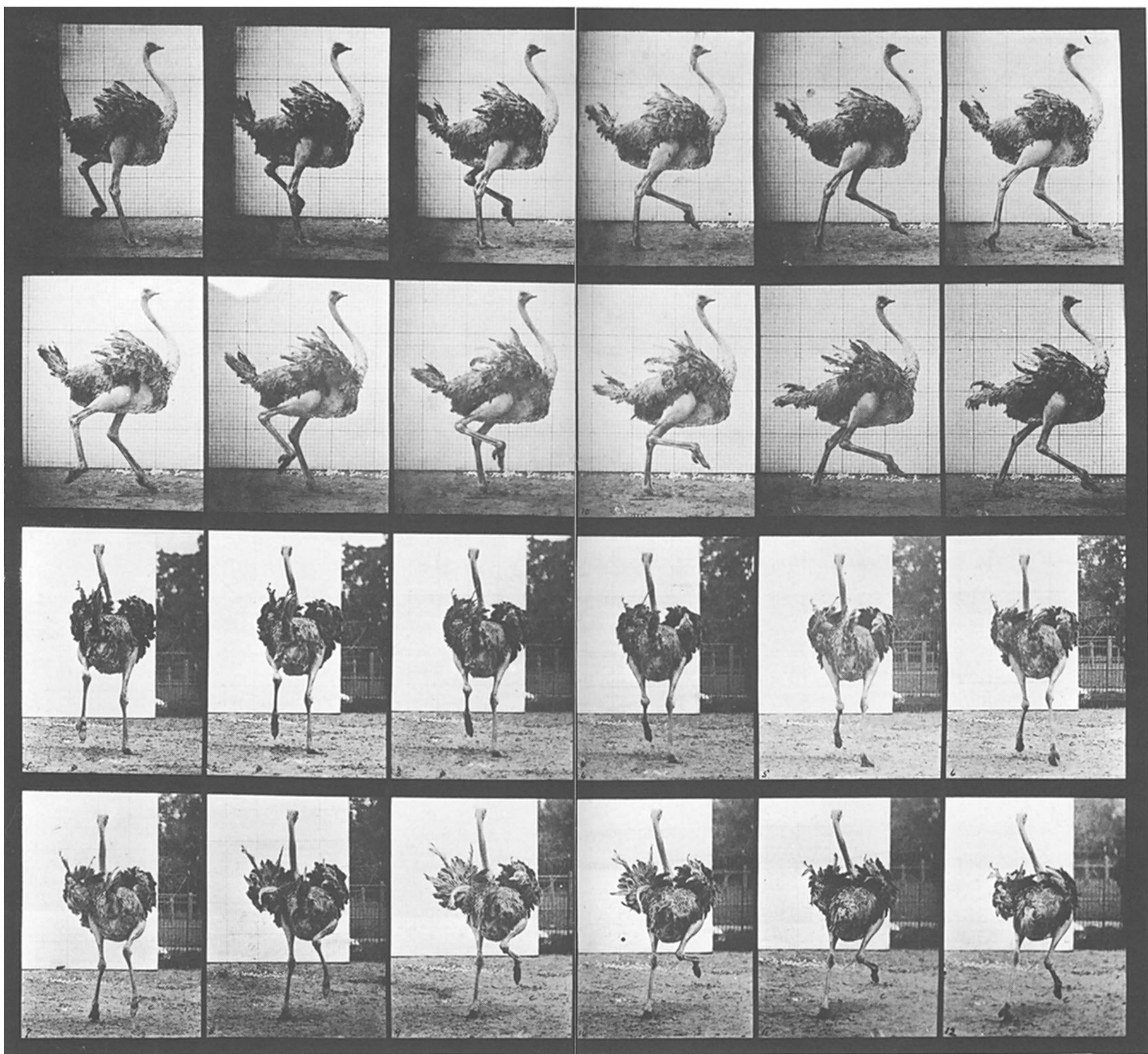


41. Baboon walking on all fours.





43. Cockatoo flying.





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HORSES

AND OTHER ANIMALS

IN MOTION

45 Classic Photographic Sequences

In 1887, the University of Pennsylvania first published pioneering photographer Eadweard Muybridge's *Animal Locomotion*, an extraordinary compilation of high-speed sequential photographs that has never been superseded as the most detailed, complete and useful visual analysis of living movement ever captured on film. Now Dover has selected the best of Muybridge's animal photographs for this first inexpensive paperbound edition. It brings an unsurpassed pictorial reference within reach of artists, photographers, animators, zoologists—anyone interested in the precise dynamics of how an animal moves.

Taken at speeds up to 1/2000th of a second, true action images show horses and other animals photographed in typical actions against ruled backgrounds. Most sequences include shots from two angles, many in foreshortened views. Horses are shown walking, trotting, cantering, galloping, pulling a weight, drawing a vehicle, and with riders bareback and in the saddle.

Dozens of other stopped-action photographs capture split-second motions of the ox, sow, goat, dog, cat, antelope, lion, camel, elk, baboon, elephant, ostrich, pigeon, cockatoo and other animals. You'll see precisely how a cat runs; how an elk trots; the way a lion sets its paw down; how an ostrich's head bobs; exactly how a dog jumps a hurdle; and many other vignettes of animals on the move.

Most important, Muybridge's photographs capture many movements too fast for the human eye to catch. Here are the rapid, often minute adjustments of bone and muscle involved in leg coordination, head movements, shifts of gravity centers and other aspects of living motion.

Now you can study these and other details in 45 classic sequences from Muybridge's landmark of early photography, reproduced directly from a rare original edition of *Animal Locomotion*. Best of all, this inexpensive Dover edition, unprecedented in publishing, makes a rich selection of the photographs widely available at a reasonable price.

Original Dover (1985) selection of 45 complete sequences from *Animal Locomotion* (1887). Publisher's Note. List of Plates. Captions. iv + 91pp. 9 × 12. Paperbound.

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